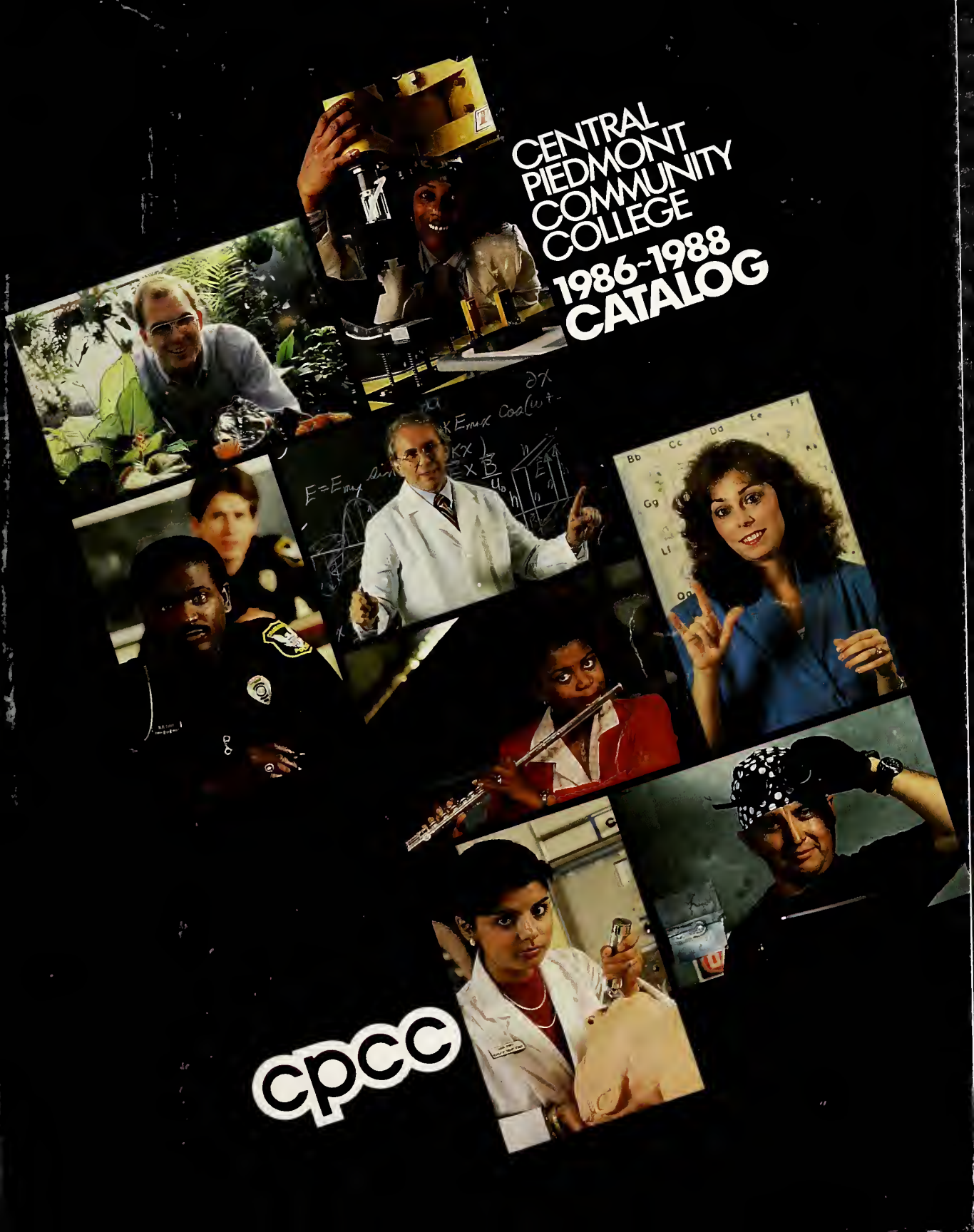
CENTRAL
PIEDMONT
COMMUNITY
COLLEGE
1986-1988
CATALOG
cpcc

1 **Bob Hammons** Student
Horticulture Technology

2 **Gayle Rhue** Student
Computer Engineering Technology
Robotics Automotion Lab

3 **Randy Stitt** Student (Front)
Mike Sloop Student (Back)
Law Enforcement

4 **Dr. Aaron McAlexander** Instructor
Physics

5 **Cheri Staley** Student
Human Services Associate
Interpreter Training

6 **Jacqueline Clark** Student
Performing Arts and Speech

7 **Jaishri Achary** Student
Respiratory Therapy

8 **Mike Cabrera** Student
Welding

Central Piedmont Community College
1986-88

Main Campus Address	Mailing: P.O. Box 35009, Charlotte, NC 28235 Delivery: 1201 Elizabeth Avenue at Old Kings Drive, 28204
Main Campus Admissions Center Hours	Monday-Thursday: 7:30 a.m. - 10:30 p.m. Friday: 7:30 a.m. - 5:00 p.m. Saturday: 8:00 a.m. - 12:00 noon
Main Campus Telephone	Admissions Center: 704/342-6687 Information Center: 704/342-6633 For other listings see Charlotte Telephone Directory
Area Learning Centers	Matthews Area Learning Center Matthews Depot Shopping Center, 115 E. Matthews Street, Matthews, NC Phone: 847-2722 North Area Learning Center Highway 21 North, Cornelius, NC Phone: 892-7600 Pineville Area Learning Center Park 51 Shopping Center, Highway 51 and Park Road Extension, Pineville, NC Phone: 542-9678 / 9335 West Area Learning Center Freedom Mall Shopping Center, Freedom Drive and Ashley Road, Charlotte, NC Phone: 342-6658
Class Schedules and Catalogs	Not all courses listed in this catalog are offered each quarter. Class schedules showing times and locations of all classes taught each quarter are delivered in Mecklenburg County by the CHARLOTTE OBSERVER the last Sunday in February, May, August and November as supplements to the Sunday editions. Catalogs and Class Schedules may be obtained free at the Admissions Center (Terrell Building, 2nd floor), at any of the Area Learning Centers (Matthews, North, Pineville, and West), or by calling 704/342-6904 to request copies by mail.
Changes	CPCC reserves the right to change its regulations, policies, fees and programs without notice.
Open Door Policy	CPCC is committed to the concept that, given enough time, most students can accomplish any learning task. The College strives to help students realize their potential as worthwhile and productive members of society.
Equal Opportunity	CPCC is committed to providing equal opportunity to all students, employees and applicants regardless of race, color, age, sex, religion, national origin, or handicap.

HARRY W. LEWIS
SYSTEMS PROGRAMMER
CENTRAL PIEDMONT COMM. COLL.
P. O. BOX 35009
CHARLOTTE, NC 28235

Welcome from the President

This catalog is an inventory of educational riches for the students of Central Piedmont Community College. The courses and programs set forth here offer dozens of pathways to success in your career, your further education, and your life.

What our catalog cannot do is describe the quality of the Central Piedmont Community college staff. We have a faculty that is committed to teaching excellence and student success. The entire CPCC staff works together to assure the best possible education for our students.

That focus on students, on educational excellence, and on working together has paid off for CPCC. We were recently named one of the top five community colleges in the nation—quite a distinction considering there are 1,219 American community colleges.

We're proud of our success, because it reflects the success of our students. We need your help to maintain this standard of excellence, so let us hear your caring criticisms or your bright ideas. We listen!

The Open Door at CPCC includes the president's office (third floor, Terrell Building). Or, if you prefer, give me a call at 342-6566.

I wish you well in your studies.

Ruth G. Shaw

Dr. Ruth G. Shaw

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Academic Calendar 1986-1987

SUMMER QUARTER 1986

Current Spring Students Register	Monday & Tuesday, June 2&3
	Wednesday & Thursday, June 4&5
Regular Registration	Monday-Thursday, June 9-12
Final Registration	Monday & Tuesday, July 7&8
Classes Begin	Thursday, July 10
Labor Day Holiday	Monday, September 1
Classes End	Thursday, September 11

FALL QUARTER 1986

Current Summer Students Register	Thursday & Tuesday, August 28 & September 2
Regular Registration	Wednesday & Thursday, September 3&4;
	Monday-Thursday, September 8-11
Final Registration	Wednesday & Thursday, September 24-25
Classes Begin	Wednesday, October 1
Thanksgiving Break	Thursday-Sunday, November 27-30
Classes End	Thursday, December 18

WINTER QUARTER 1987

Current Fall Students Register	Mon.-Weds., December 1-3, 1986
Regular Registration	Thursday, December 4;
	Mon.-Thurs., December 8-11, 1986
Final Registration	Mon. & Tues., January 5&6, 1987
Classes Begin	Thursday, January 8, 1987
Classes End	Wednesday, March 25, 1987

SPRING QUARTER 1987

Current Winter Students Register	Monday-Wednesday, March 2-4
Regular Registration	Thursday, March 5;
	Monday-Thursday, March 9-12
Final Registration	Monday & Tuesday, March 30&31
Classes Begin	Thursday, April 2
Easter Break	Friday-Monday, April 17-20
Classes End	Saturday, June 20

SUMMER QUARTER 1987

Current Spring Students Register	Monday & Tuesday, June 1&2
Regular Registration	Wednesday & Thursday, June 3&4;
	Monday-Thursday, June 8-11
Final Registration	Wednesday & Thursday, July 8&9
Classes Begin	Wednesday, July 15
Labor Day Holiday	Monday, September 7
Classes End	Wednesday, September 16

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Academic Calendar 1987-1988

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FALL QUARTER 1987

Current Summer Students Register.....Thursday, August 27;
Monday, August 31
Regular Registration .....Tuesday-Thursday, September 1-3;
Tuesday-Thursday, September 8-10
Final Registration .....Wednesday & Thursday, September 30
& October 1
Classes Begin .....Monday, October 5
Thanksgiving Break.....Thursday-Sunday, November 26-29
Classes End .....Tuesday, December 22

WINTER QUARTER 1988

Current Fall Students Register .....Monday, November 30 &
Tuesday, December 1, 1987
Regular Registration .....Wednesday & Thursday,
December 2&3, 1987;
Mon.-Thurs., December 7-10, 1987
Final Registration .....Tues. & Weds., January 5&6, 1988
Classes Begin .....Monday, January 11, 1988
Classes End .....Saturday, March 26, 1988

SPRING QUARTER 1988

Current Winter Students Register.....Monday, February 29; Tuesday-
Wednesday, March 1-2
Regular Registration .....Thursday, March 3;
Monday-Thursday, March 7-10
Final Registration .....Tuesday & Wednesday, March 29&30
Easter Break.....Friday-Monday, April 1-4
Classes Begin .....Wednesday, April 6
Classes End .....Tuesday, June 21

SUMMER QUARTER 1988

Current Spring Students Register .....Monday & Tuesday, May 30&31
Regular Registration .....Wednesday & Thursday, June 1&2;
Monday-Thursday, June 6-9
Final Registration .....Monday & Tuesday, July 11&12
Classes Begin .....Thursday, July 14
Labor Day Holiday.....Monday, September 5
Classes End .....Thursday, September 15

FALL QUARTER 1988

Current Summer Students Register.....Thursday, August 25;
Monday, August 29
Regular Registration .....Tuesday & Wednesday, August 30&31;
Thursday, September 1;
Tuesday-Thursday, September 6-8
Final Registration .....Wednesday & Thursday,
September 28 & 29
Classes Begin .....Monday, October 3
Thanksgiving Break.....Thursday-Sunday, November 24-27
Classes End .....Tuesday, December 20

Administration

Ruth G. Shaw	President
N. Gayle Simmons	Executive Vice President
E. Worth Campbell, Jr.	Assistant to the President
Betty J. Funderburke	Director of Personnel
Melvin L. Gay	Vice President, Student Development Group
Tom Griffin	Vice President, Basic Studies Group
David L. Hunter	Vice President, General Studies Group
Otto A. Lockee	Vice President, Corporate Services
William A. McIntosh	Vice President, Educational Planning and Evaluation
Jack Mullis	Manager, Plant Operations and Purchasing
Michael G. Myers	Vice President, Community Relations and Special Projects
Bruce H. Smith	Vice President, Administrative Services Group
Carl E. Squires	Vice President, Career Programs Group
Renee P. Westcott	Vice President, Learning Resources Group
Alex Wylie	Acting Comptroller
Marion H. Baker	Assistant for Institutional Services

Board of Trustees

William M. Claytor, Chairman
Maggie Ray, Vice Chairman
Ruth G. Shaw, Secretary

Appointed by the Governor:

Willie A. Smith	1987
Maggie W. Ray	1989
Albert F. Sloan	1989
Natalie Cohen	1991

Appointed by the Mecklenburg County Board of Commissioners:

(to be appointed)	1987
William M. Claytor	1989
(to be appointed)	1989
Donald W. Holland	1991

Appointed by the Charlotte-Mecklenburg Board of Education:

Mary Olive Johnson	1987
Barbara Davis	1989
George R. Morgan	1989
Spurgeon W. Webber	1991

Student Association President—Non-Voting Member

How To Read This Catalog

This Catalog should not be read straight through as you would a novel. Instead, skim through it and become familiar with the different kinds of information it contains. Properly used, it becomes a tool for answering many of your questions and for helping you learn more about CPCC. What should you study? What are program requirements? What will you learn in the classes offered? Are you eligible for financial aid? What social or sports organizations are there?

Don't let the unfamiliar language scare you:

Advancement Studies: Basic courses (identified with a 9000 number) which prepare you for more advanced study.

Associate Degree: A document issued to a student signifying completion of a two-year curriculum/program.

Basic Studies/Preparatory Courses: Include Adult Basic Literacy Education (ABLE); Advancement Studies; Adult Basic Education (ABE); General Educational Development (GED); English as a Second Language (ESL); and Adult High School Completion (HSC). These are identified with 6000 or 9000 numbers and prepare students for more advanced study.

Career Program: A two-year curriculum/program (Associate in Applied Science Degree) of specific courses. The courses are numbers in the 3000-4000s. Some *completed* two-year degrees may be transferred to a four-year college/university. Consult with a faculty adviser or program counselor regarding transferability.

Certificate: A document issued to a student signifying completion of a specific series of skill courses. The curriculum/program is less than one year in length.

Contact Hours: The total hours of class and lab required per week in a course.

Course Description: Tells you what is taught in the course, what the objectives are, and what you should be able to do upon completion. At the end of the description you can learn required classroom hours, lab hours, clinic or co-op hours, credit hours and if a prerequisite/corequisite is needed.

Corequisite: Any course which must be taken during the same term as the course that specifies the corequisite.

Credit: The number of units, measured in quarter hours, a course is worth.

Curriculum: A set of courses which awards a certificate, diploma, or associate degree, but with a purpose such as preparing a student to enter the work world immediately or to transfer to a degree program at another college.

(Continued on next page)

Custom Course Center: A Center offering non-credit continuing education/extension courses for businesses, for upgrading skills, or for personal enrichment (identified with 7000-8000 numbers).

Diploma: A document issued to a student signifying completion of a one-year curriculum/program.

Drop/Add: The procedure whereby students may change their class schedules by dropping or adding a course without penalty after initial registration.

Elective Course: A non-required course which a student may choose to take from a number of alternative courses as distinguished from specific required courses.

Full-Time Student: A student enrolled for 12 or more credits per quarter.

Grade Point Average (GPA): The number of honor points earned divided by the quarter hours of credit attempted.

In-State: A legal resident of North Carolina for more than one year.

Out-of-State: Legal resident of a state other than North Carolina, or of a foreign country.

Part-Time Student: A student enrolled for less than 12 credits per quarter.

Prerequisite: A course you must successfully complete for background information before enrolling in a particular course. For example, Accounting II has a prerequisite of Accounting I.

Program: (see Curriculum definition).

Transcript (student record): A student's official academic record kept in the Office of Student Records. It shows all academic work attempted and grades, as well as transfer credits accepted. No one other than authorized CPCC employees may see your transcript without your permission.

Transferability: The ability to transfer some *completed* "Career Programs" (Associate in Applied Science degree) to a college/university. These courses are numbered in the 3000-4000s. Students should consult with a faculty adviser or program counselor regarding transferability. *Note:* "Transfer Programs" (Associate in Arts Degree or Fine Arts Degree) offer courses comparable to freshman and sophomore courses taught at a four-year college/university. College transfer courses are numbered in the 1000s and 2000s.

Transfer Programs: CPCC freshman and sophomore (Associate in Fine Arts and Associate in Arts) courses which transfer to four-year colleges or universities. They are identified with 1000-2000 numbers. (See Transferability.)

Tuition: The amount of money a student must pay at the time of registration for each hour of academic credit. Tuition is based on the student's residency classification and classes taken.

Withdrawal: The process whereby a student discontinues enrollment in one or more courses. Withdrawal procedures must be done through the Registration Center to be official.

ADMISSIONS

Admissions

Central Piedmont Community College follows an "open-door" policy which welcomes all students without regard to color, creed, handicap, race, or sex. Admission to the College, however, does not mean students will be admitted immediately to a program with specified admissions requirements.

Steps in admissions vary, depending on what a student plans to accomplish at CPCC. STUDENTS ARE ENCOURAGED TO CONTACT THE COLLEGE EARLY IN ORDER TO COMPLETE THE STEPS OUTLINED HERE BEFORE THE REGISTRATION PERIOD BEGINS. Questions should be directed to the Admissions Center, Terrell Building 2nd Floor, 704/342-6687 (Mailing address: CPCC, P.O. Box 35009, Charlotte, NC 28235).

Here are instructions for students who:

A. plan to enter a degree, diploma, or certificate program
B. want to change their program (field of study)
C. need career/life planning assistance before selecting a program
D. plan to complete high school (grades 10-12)
E. plan to complete grades 1-9
F. plan to learn basic skills in reading and mathematics
G. are currently enrolled in Charlotte area high schools and who want to register for courses at CPCC
H. do not plan to enter a degree, diploma, or certificate program and who want to register for courses of special interest
I. are international students planning to register for courses at CPCC.

A. ***Students who plan to enter a degree, diploma, or certificate program*** need to complete these steps ***before*** registration begins:

1. Complete a Student Data Sheet. These are available at the Admissions Center, at any Area Learning Center, or by mail. On the back of the Student Data Sheet, indicate the program you plan to enter. *NOTE:* Students who plan to transfer to a four-year college or university after one or two years at CPCC should indicate either the Associate in Arts or Associate in Fine Arts Degree program.
2. Have official transcripts of all high school, pre-college, and other college-level work sent from each school previously attended. These should be directed to: Admissions, CPCC, P.O. Box 35009, Charlotte, NC 28235. The name that you are currently using should appear on each transcript.

   All degree programs, health career diploma programs, and most other diploma programs require high school graduation or the equivalent. The high school graduation requirement is considered to be met with a high school diploma, or by possession of a State High School General Equivalency Certificate (GED), or by possession of an Adult High School Diploma.

   CPCC accepts credits from other accredited colleges and technical institutions. Only courses applicable to the student's program of study with grades of "C" or better will be accepted.
3. Take placement tests as required for the degree, diploma, or certificate program you plan to enter.

   With the exception of most Allied Health programs, appointments for placement tests are made at the Admissions Center (Terrell Building 2nd Floor). Students who mail in their Student Data Sheets will receive mailed instructions for scheduling their appointments. Students who complete their Student Data Sheets at the Admissions Center will receive instructions about placement test appointments at that time.
4. Meet with the program counselor at the specified time for: (a) orientation to the College, (b) placement test results, (c) overview of the program, and (d) recommended list of courses to register for during your first quarter at CPCC.
5. Register for courses (refer to the Academic Calendar on pages 4 and 5 for registration dates and availability of the CPCC Class Schedule).

B. ***Students who want to change their programs*** need to complete the following steps ***before*** registration begins:

1. Get a Change of Program Form at the Admissions Center (Terrell Building 2nd Floor) or telephone 342-6687 to start processing.
2. Complete a new Student Data Sheet.
3. Take additional placement tests, if required for the new program.
4. Meet with the program counselor at the specified time.
5. Register for courses in the new program (refer to the Academic Calendar on pages 3 and 4 for registration dates and availability of the CPCC Class Schedule).

C. ***Students who need career/life planning assistance before selecting a program:***

1. Get a Student Data Sheet from the Admissions Center (Terrell Building 2nd Floor), one of the Area Learning Centers, or request that one be mailed to you. This should be done early and ***before*** the registration period. Indicate "Undecided," instead of a program, on the back of the Student Data Sheet.
2. Follow steps A.2. and A.3. above.
3. Meet with the career/life planning counselor as scheduled. You will receive further instructions about how to proceed at this time. If additional information is needed, call the Admissions Center (342-6687).
4. Register for courses after you see your program counselor at the scheduled time (refer to the Academic calendar on pages 4 and 5 for registration dates and availability of the CPCC Class Schedule).

D. ***Students who plan to complete high school (grades 10-12).*** CPCC offers the Adult High School Completion Program (HSC) and the Tests of General Educational Development (GED):

1. The ***Adult High School Completion (HSC)*** program leads to an earned diploma granted by the Charlotte/Mecklenburg Board of Education. For graduation, the Board requires four units of English, two units of mathematics, two units of general science and biology, and two units of American and world history, as well as successful completion of the North Carolina Competency Tests. Students who have not met each of these requirements enroll for at least one quarter of study in appropriate areas. After one quarter, a standardized test is given. A satisfactory test score earns credit toward graduation for that entire subject. North Carolina Competency Tests are administered on a regular basis. There is no charge for these classes or for the Competency Tests. For more information about the Adult High School Completion program, call 342-6949.
2. The ***Tests of General Educational Development (GED)*** offer another route for students who have not completed high school. A state high school credential is issued by the North Carolina State Board of Education after a student passes five individual tests in English, mathematics, science, social studies, and reading. A pre-test is used to indicate performance levels and provide the basis for assistance. CPCC offers GED classes on campus, as well as in off-campus centers. These classes are self-paced and allow students to progress at their own learning rates and on schedules which best suit their needs. There is no charge for the pre-test or for the classes; a $5.00 fee is charged for the Tests. For more information about GED, call 342-6349.

E. ***Students who plan to complete grades 1-9:***

Adult Basic Education (ABE) is available for students whose schooling stopped short of the ninth grade. ABE provides instruction in basic reading and mathematics. Upon completion of the ABE program, the student may enter the Adult High School Completion program. There is no charge for these classes. For more information about ABE, call 342-6688.

F. ***Adult students who plan to learn learn basic skills in reading and mathematics:***

The ***Adult Basic Literacy Education (ABLE)*** program is located at community sites. This program offers a new approach for adults who cannot read, write, or calculate at an adult level. The program combines the use of microcomputers, video systems, audio tapes, specialized programming, and tutors to teach adults reading and mathematics skills. Instructors guide students through program materials and help with the use of equipment. There is no charge for ABLE instruction. For more information about ABLE, call 342-6688.

English as a Second Language is a program offering courses which enable students to master English as a second language. Students study the customs and traditions of American culture while learning the language. Academic and/or vocational courses may be taken when the student's language proficiency allows it.

G. ***Students currently enrolled in Charlotte area high schools*** who want to take courses at CPCC.

Two programs are available:

1. The ***Concurrent Enrollment Program***, for students who are at least 16 years old, enables qualified students to take courses at CPCC for remedial purposes, high school credit, personal enrichment, or college credit. Students in the Concurrent Enrollment Program must meet the prerequisites stated in the course description section of this catalog. They are regarded as regular students of the College.

   A student participating in this program must have the endorsement of the high school principal who affirms that the student is in good standing, is at least 16 years old, and has approval to register for the courses chosen. To register in this program, get a Concurrent Enrollment Form from the principal's office (or one will be mailed by calling CPCC, 342-6888). Present the signed form when registering. (Refer to the Academic Calendar on pages 4 and 5 for registration dates and availability of the CPCC Class Schedule.) For more information about the Concurrent Enrollment Program, call 342-6784.
2. The ***College Experience Program*** in Charlotte/Mecklenburg high schools enables rising seniors to register for approved courses at CPCC as part of their high school class schedule in their senior year. Upon successful completion of these courses they will receive credit at both the high school and at CPCC. For more information about the College Experience Program and a list of approved courses, contact the high school counselor's office.

H. ***Students who do not plan to enter a degree, diploma, or certificate program at CPCC and who want to take courses of special interest:***

1. Course descriptions in the back of this catalog list the prerequisites (requirements) that must be met before registering for a course. Please note that COM 1304 (Introduction to Communications) and certain mathematics courses require placement testing ***before*** registration. Contact the Admissions Center to schedule a placement test appointment (Terrell Building 2nd Floor, 342-6687).
2. Refer to the Academic Calendar on pages 4 and 5 for registration dates and availability of the CPCC Class Schedule, and register.

I. ***International Students:***

Central Piedmont Community College is approved to enroll alien students. Accordingly, a Certificate of Eligibility

(Form I-20) will be issued to anyone who meets admission requirements, provided that the quota for that particular country is not filled.

Any foreign national (non-immigrant) who is seeking admittance under an F-1 student visa is required to buy medical insurance every quarter prior to registration. Insurance applications are available in the Office of the International Student Adviser, Kratt Hall 102.

Legal residents with permanent visas (Alien Registration Card holders) are admitted to Central Piedmont Community College in the same manner as native citizens of the United States of America. International visitors holding B-2 or other visas may enroll as "Special Credit" or extension students as long as they hold a valid visa.

For more information, contact the International Student Adviser, Kratt Hall 102, 704/342-6456.

Attendance

Absences seriously disrupt a student's orderly progress in a course, and significantly diminish the quality of group interaction in class. There is also a close correlation between the number of absences and the final grade. Although an occasional absence may be unavoidable, it in no way excuses a student from meeting the the requirements of the course. Students are still responsible for preparing all assignments for the next class and for completing work missed. If a student is out of contact for two consecutive weeks, the instructor has authority to withdraw the student officially from the course, as well as authority to determine whether the student shall be reinstated.

Auditing Courses

A student auditing a course is expected to attend regularly, but may choose not to take examinations, and will not receive college credit. Each student must request audit status from the instructor at the first class meeting.

The extent to which an auditing student participates in class assignments will be decided by the student and the instructor. For tuition and fee purposes, an audit requires full course payment. A record of the audit shall be entered on the student's transcripts as AUD with no college credit given. It cannot later be converted to a letter grade. Procedures for registering or withdrawing from AUD courses are the same as for any other course.

Certain courses (such as First Aid or CPR) may be designated as inappropriate for audit.

Counseling Services

Counselors and support staff in the Counseling Services Department are available to provide information and assistance in the areas of high school articulation, admissions, GED testing, adult high school completion, orientation to the College and to programs of study, career counseling, international student processing, and graduation certification. In this regard, students may be scheduled with counselors on an individual basis or in groups.

Counselors at CPCC also provide personal counseling for students on a time-available basis. Students are referred to appropriate community agencies or resource persons when it is apparent they can be assisted more effectively in this way. Counselors are also available to the community as consultants.

Course Load

Students registered for at least 12 hours of credit are considered full-time students. Overload hours require permission from a program director, program counselor, or assistant to the program vice president. Overload forms are available at the Admissions Center or the Counseling Appointment Desk on the second floor of the Terrell Building, or at any of the Area Learning Centers. The approved overload form should be presented when registering.

Overload levels are:

Career Programs ..... 21 or more hours
Transfer Programs ..... 20 or more hours
Associate in General Education ..... 20 or more hours

Course Substitution

Course substitutions are permitted upon the recommendation of the program department/division head and with approval of the vice president. No substitute course is required unless failure to do so would place a student's total hours below that required for graduation.

Course Waiver

A student may be permitted to waiver a course which is ordinarily required if approval is obtained from the program department/division head and vice president. No credit hours shall be granted. No substitute course is required unless a student's total hours fall below that required for graduation.

Credit By Examination

Upon petition from a student, credit by examination may be given. If circumstantial evidence indicates the probability of special aptitude or knowledge on the part of the petitioner, a written, oral and/or performance examination will be developed and administered by an instructor of the course. The examination is subject to the approval of the department head. Prior to the administration of the examination, the student will be interviewed by the instructor to determine the student's eligibility for the examination. If the student achieves satisfactory performance on the examination, a grade of "X" will be recorded. The "X" grade carries no quality points, but credit hours will be given identical to the number of credit hours normally assigned to that course at Central Piedmont Community College.

Faculty Advisement

Students who are enrolled in a program and are experiencing academic difficulties and/or inability to complete courses will be mailed notices of required conferences with faculty advisers prior to registration.

Grades

The following letter grades are used at Central Piedmont Community College:

A An "A" will be assigned when the student has met the maximum obtainable objectives established for the course as set up by the instructor and the division/department involved.

B A "B" will be assigned when the student has met objectives far above standard course work as set up by the instructor and the division/department involved.

C A "C" will be assigned when the student has met the minimum objectives of the course as set up by the instructor and the division/department involved.

IM Incomplete (Makeup): An "IM" will be assigned when a student has persisted through the quarter and has completed at least 90% of the department/division requirements for passing the course at the "C" level; or in other extenuating circumstances as determined by the instructor. The student has two quarters to resolve an "IM." A resolved "IM" will be replaced on the transcript by the assigned grade. An unresolved "IM" will remain on the transcript. An "IM" will not count as credit hours attempted. The student need not re-enroll to resolve an "IM" within the two-quarter period.

IR Incomplete (Repeat): An "IR" may be assigned when a student ***has not qualified for an "IM" (Makeup) or a "W" (Withdrawal).*** An "IR" will remain on the transcript. An "IR" will not count as credit hours attempted. The student must re-enroll to re-take the course.

W Official Withdrawal: A "W" will be assigned during the first two-thirds of a course if a student has been out of contact with the instructor for two consecutive weeks. The instructor may also assign a "W" at other times when circumstances warrant such action. The instructor may reinstate the student. The student may also officially withdraw from a course prior to the last ten days of the quarter by presenting a request to the Registration Center. A "W" will remain on the transcript and will not count as credit hours attempted.

S Satisfactory.

X Credit by Examination.

AUD Audit.

Grade Point Average (Quality Point Average)

The College uses a Quality Point Average system based on 4.0, which equals an "A." "B" equals 3.0; "C" equals 2.0. Overall average is determined by dividing total quality points by total hours completed. IM's and IR's are not included when computing QPA.

Plagiarism

When students use another person's work, words or ideas without properly acknowledging the source, they are plagiarizing and are subject to the discipline of the instructor.

Possible actions open to the instructor are to dismiss from class and assign "IR," re-admit to class conditionally, or re-admit to class unconditionally.

Registration

Registration dates are published in the Academic Calendar (pages 4 and 5) and in the quarterly Class Schedules.

The College year consists of four quarters: Fall, Winter and Spring quarters (11 weeks) and Summer quarter (9 weeks). The Summer quarter is considered the same as other quarters where course offerings are concerned, and also includes a short session (5 weeks). Students are encouraged to register as early as possible to avoid the inevitable delays of final registration and to increase the probability of obtaining the schedule of classes which best meets their needs.

Registration locations are on-campus and at the Matthews, North, Pineville, and West Area Learning Centers. Other ways to register are by mail, telephone, or in-class.

Repeating Successfully Completed Courses

If students wish to repeat courses in which they have received passing grades twice, they must secure departmental permission.

Exceptions: Successfully completed HPE courses may not be repeated without division/department head approval, but self-supporting courses can be repeated without permission.

Schedule Adjustment and Drop/Add

Students may make schedule adjustments throughout the announced registration period. A special schedule adjustment week following the close of the registration period provides an opportunity for students PREVIOUSLY REGISTERED to make required adjustments to their schedules. Classes may be dropped for a full refund of tuition. *Exception:* Tuition will not be refunded for self-supporting classes or classes numbered 7000-8000. During the schedule adjustment period, a student may add a class only to replace a class dropped because of class cancellation or an error made in preparing their schedule. During the schedule adjustment

period, a student may switch class sections (i.e., classes) without obtaining written permission provided the new class section is not filled. Should a student make an error in registering for a class (i.e., register for a math class that is too advanced), an adjustment to correct the error may be made if department head approval is obtained. Such approval must be in writing and specify the error made, as well as the change required to correct it.
NOTE: See Refund Policy.

Student Conduct

College students are considered to be mature individuals. Their conduct, both in and out of the College, is expected to be that of any respectable adult in a public place. Under these circumstances, it is expected that students will remember that they are in a democratic situation and that the reputation of the institution rests on their shoulders. Common courtesy and cooperation make a long list of rules unnecessary.

However, students should note that the possession, consumption or distribution of alcohol or illicit drugs on campus or at any CPCC instructional site is specifically prohibited and regulated by State statute. Violators will be prosecuted by civil authorities.

Failure to meet standards of conduct acceptable to the College may result in disciplinary suspension. The procedure stated below will be followed when disciplinary action against a student is being considered:

1. The student will be informed of the charges against him/her both in writing and in conference with the Vice President for Student Development or representative.
2. The student will be advised of the date, time, location and procedures of the meeting in which the charges will be presented.
3. The Vice President for Student Development has the right to suspend a student temporarily until the hearing process can be completed.
4. The charges will be described and examined at a meeting of the accusers, the student, the Vice President for Student Development or representative, advisers, and assistants that either party wishes to bring. The Vice President for Student Development must be notified within two days of the hearing regarding anyone other than the principal parties who will be attending.
5. The Vice President for Student Development will have two days following the hearing to consult again with all parties, as may be necessary, and render a decision.
6. This decision may be appealed to the Executive Vice President and the President of the College.
7. A student who is dismissed must apply to the Vice President for Student Development before readmission can be approved.

Student Grievance Procedure

Students wishing to appeal any decision affecting their status at Central Piedmont Community College should first appeal to the instructor or staff member making the decision. If students are not satisfied and the problem involves a program matter, appeal may be made through the appropriate curriculum Department/Division Head to the program Vice President and the President. Non-program matters follow the same route except through the Vice President for Student Development rather than a program Vice President. All such appeals should be in writing and state the basic facts of the case.

A grievance related to discrimination should first be presented to the appropriate compliance officer. Grievances related to Section 504 of the Rehabilitation Act of 1973 should contact the Director of Special Services (Terrell Building, fifth floor); for Title IX, the Personnel Director (Terrell Building, third floor).

Student Records (Transcripts)

The College maintains the position that students' records are their own property; therefore, this information is released only when a student signs a Records Release Form in the Office of Student Records (Room 200, Terrell Building). Students may have copies of their transcripts sent to any institutions or individuals they choose. They may also order copies for their own use. The first two copies are free; $1.00 is charged for each additional copy.

Policies and Procedures:

Central Piedmont Community College, in the fulfillment of its responsibilities to students, must maintain accurate and confidential student records. The College staff must recognize the rights of students to have access to their academic and personal records in accordance with existing college policy and the Family Educational Rights and Privacy Act of 1974 (Buckley Amendment).

Definition of Term "Educational Records":

These regulations as defined under the provisions of the Family Educational Rights and Privacy Act of 1974 include files, documents and other materials which contain information directly related to students and which are maintained by an educational institution or by an authority on behalf of the institution. The term "educational record," under the provisions of the law, does not include the following:

1. Records of institutional, supervisory and administrative personnel which are in the sole possession of the maker and which are not accessible or revealed to any other person except a substitute for the above named personnel;
2. Records and documents of Security Officers of the institution which are kept apart from such educational records.

3. Records on students which are made or maintained by a physician, psychiatrist, psychologist, counselor or other recognized professional or paraprofessional acting in their official capacity and which are made, maintained or used only in connection with a provision for treatment for the student and not available to anyone other than the persons providing such treatment, except that such records can be personally reviewed by a physician or other appropriate professional of a given student's choice;
4. Financial records of the parents of the students or other information therein contained;
5. Confidential recommendations if a given student has signed a waiver of the student's rights of access, provided such a waiver ***may not*** be required of the student; and
6. Confidential letters or statements of recommendation which were placed in educational records prior to January 1, 1975, if such records or statements are not used for purposes other than those for which they were specifically intended.

Control Provisions on Student Records and Student Information:

1. Transcripts and other information are released only with written permission of the student. When information other than the transcript is released from the student's official record (Office of Student Records), the student will receive a copy of the release.
2. Students have the right to inspect their own records whether recorded in hard copy form or recorded in the form of magnetic disks and microfilm. Upon inspection students are entitled to an explanation of any information contained in their records.
3. The official student file shall not be sent outside the Counseling Office, Records Office, Admissions Center, Financial Aid Office, Veterans Affairs Office, or other custodial office except in circumstances specifically authorized by the appropriate Vice President. The authorization for such special circumstances must be in writing.

Release of Student's Educational Records to Educational Institutions, State and Federal Agencies:

1. Such requests for confidential information shall not be honored without proper written consent by the student for the release of such records by the student except under conditions indicated in paragraphs 2 ansd 5 below.
   a. The written consent must specify the records or the specific data to be released, to whom they are to be released, and the reasons for release.
   b. Each request for consent must be specific, and each request must be handled separately.
2. Request for confidential information will be honored without prior consent of the student in connection with an emergency, if the knowledge of such information by appropriate persons is necessary (in view of a reasonable person) to protect the health or safety of the student or other persons. However, such a release shall have the approval of a Cabinet Officer unless it can be shown that under the circumstances time would not permit or no Cabinet Officer was available.
3. The following "Directory Information" may be made available to the public by the College unless students notify the Vice President for Student Development in writing by the third week of the quarter that such information concerning themselves is not to be made available:
   a. Student's name and hometown;
   b. Major field of study or program;
   c. Dates of attendance, degrees, diplomas or awards received and the most recent previous educational institution; and
   d. Place of birth.
4. Information Other than "Directory Information"—Any release of student information for public use or use by the media except that designated above (paragraph 3) must have prior written approval by the students involved.
5. Disclosure to Government Agencies—Properly identified and authorized representatives of or bona fide written requests from the Comptroller General of the United States; the Secretary of Health, Education and Welfare; an administrative head of a federal education agency; or state educational authorities may have access to student or other records which may be necessary in connection with the audit and evaluation of federal or state supported educational programs or in connection with the enforcement of the federal or legal requirements which relate to such programs. Routine requests for student data from such agencies as HEW, OEO, research agencies, and state reporting agencies may be honored without prior approval of the student only in formats where students are not identified.
6. Faculty and administrative officers of the College who demonstrate a legitimate educational need will be permitted to look at the official student file for a particular student.
7. Confidential information requested by other than federal or state agencies as specified in paragraph 5 above will be released only under the following conditions:
   a. An official order of a court of competent jurisdiction, or
   b. Subpoena (students will be notified immediately by registered mail that their records are being subpoenaed.)
8. Record of Who Has Access—A record of access to the official student file will be maintained within the file itself. This record will show the ***name, address, date and purpose*** of the person who has been granted access. All persons who have access will be included in this record except those institutional employees who, because of the nature of their duties, have been granted access.

Students' Rights to Question Content of Their Official Student Files:

1. Students have the right to review their official records maintained by the College. Furthermore, students may question any inaccurate or misleading information and request correction or deletion of such data from their files.
2. All such requests will be sent to the Director of Student Records and will become a part of that student's file.
3. All requests for correction of a student file will be acted upon within 45 days of receipt of the request. If the custodian can verify that such data are, in fact, in error, appropriate corrections will be made and the student will be notified in writing when the correction has been completed. If an error cannot be readily substantiated, the request will be referred to an Ad Hoc Hearing Committee appointed by the Executive Vice President.

   After a student has had the opportunity to present the case to the hearing committee, the committee will render a decision in writing stating the reasons for its decision. If the decision is in agreement with the student's request, the student will be permitted to review the file to verify that the change has been made correctly. If the student's request is denied, the student will be permitted to append a statement to the record in question, showing the basis for the disagreement with the denial. Such appendages will become a permanent part of the record.

Annual Notice to Students of Their Rights Under Family Educational Rights and Privacy Act of 1974:

The College policy on access to and release of student information will be made available to students, faculty and staff. This information will be placed in the Student Handbook and will specify the procedures for release of student information, student access to records, a description of all student records being maintained by the College, and the procedure for students to initiate a hearing to challenge accuracy of educational records.

Tour, Campus (Students)

We encourage you or your group to visit our campus for a guided tour. It is a good way for you to see for yourself what CPCC is. To arrange tours call Student Activities, 342-6584. As appropriate, we will arrange for faculty members to explain their departments to you, so tell us your special interest when you call. If you are already on campus or not in a group, call us and we will do our best to arrange a Student Activities guide.

Withdrawal From Classes

Students who cannot complete a course for any reason should *officially* withdraw through the Registration Center prior to the last ten calendar days of the quarter in order to receive a final grade of "W." Exceptions to the ten-day deadline can be made in hardship cases with the approval of the program vice president.

If students are out of contact with the instructor for two consecutive weeks, the instructor may officially withdraw them from the course. In these cases, the instructor has the authority to reinstate them. However, it is the students' responsibility to be sure they are officially withdrawn from a course in order to avoid an IR grade.

INSTRUCTIONAL PROGRAMS

Instructional Programs
Degrees/Diplomas/Certificates

Associate in Applied Science Degree (A.A.S.)

These programs offer business, health-related and public service courses as well as courses in engineering and other technologies. These courses are designed to enable the graduate to enter an occupation with a marketable skill, a high level of competency, and the ability to communicate effectively. Highly specialized courses combined with general education courses enable students to be effective members of society. The following programs are available: Accounting; Air Conditioning, Heating and Refrigeration Technology; Architectural Technology; Automotive Technology; Banking and Finance; Bookkeeping/Clerical; Business Administration; Civil Engineering Technology; Commercial Art—Advertising Design; Commercial Art—Interior Design; Computer Engineering Technology; Computer Programming, Business; Correctional Services; Dental Hygiene; Electrical Engineering Technology; Electronics Engineering Technology; Fire Protection Technology; Food Service Management (Chef Training); General Office; Graphic Arts (Printing) Management; Horticulture Technology; Hotel/Restaurant Management; Human Services Associate (Early Childhood, Social Services, Interpreter Training); Industrial Safety, Health, Security and Investigations; Insurance; Law Enforcement Technology; Manufacturing Engineering Technology; Marketing and Retailing; Mechanical Engineering Technology; Medical Office Assisting; Medical Record Technology; Nursing, Associate; Paralegal; Physical Therapist Assistant; Postal Service Technology; Real Estate; Recreation Associate; Respiratory Therapy; Secretary, Executive; Secretary, Legal; Secretary, Medical; Traffic and Transportation.

Associate in Arts Degree (A.A.)

The purpose of these programs is to provide courses in liberal arts and pre-professional areas which will enable students to enter as juniors at four-year institutions of their choice. While the liberal arts program suggested elsewhere in this catalog will satisfy the requirements of most senior institutions, it is the responsibility of all college transfer students to identify as early as possible the institutions to which they will apply for transfer to determine the specific requirements of those institutions for the freshman and sophomore years. Each student's sequence of courses should be planned by the student and program counselor or faculty adviser with a specific four-year institution in mind.

Associate in Fine Arts Degree (A.F.A.)

This program offers courses in dance, drama, fine arts and music so that students can declare a major in one of these areas. It will prepare students to enter as juniors at four-year institutions. Each student's sequence of courses should be planned by the student and a program counselor or faculty adviser, with a specific four-year institution in mind.

Associate in General Education Degree (A.G.E.)

The Degree of Associate in General Education is designed for persons who want to develop a program of study to meet their special needs. Candidates for this degree may present credit courses taken in the Associate in Arts Programs, the Associate in Fine Arts, the Associate in Applied Science Program, the diploma programs, credit courses in the Advancement Studies Department, C.L.E.P., or any combination of these. A.G.E. students may enroll in any program for any course in which they can meet prerequisites. To graduate with the A.G.E. Degree, candidates must meet the following requirements: completion of at least four courses from three of the following disciplines (one of which must be English)—English, Social Science, Science or Mathematics, Humanities, Performing Arts or Fine Arts; a maximum of 24 quarter hours in 9000 courses may be used; completion of 96 hours of college credit courses (or completion of 32 additional hours of college credit courses if the student has previously earned another degree); official copies of high school and other college transcripts on file in the student's record folder at CPCC. A minimum of 32 quarter hours must be earned in residence at Central Piedmont Community College, 16 of which must be the final credit hours prior to graduation.

Diploma

These programs offer courses designed to meet the ever-increasing need of our complex society for skilled craftsworkers. Graduates earning a diploma should enter employment with a high degree of manipulative skill. Graduates also gain knowledge of basic mathematics, science and communications. The following curricula are available: Air Conditioning, Heating and Refrigeration; Automotive Body Repair; Automotive Mechanics; Computer Operations; Dental Assisting; Diesel Vehicle Maintenance; Electrical Installation and Maintenance; Food Service Specialist (Chef Training); Graphic Arts (Printing); Horticulture; Hospital Ward Secretary; Insurance; Machinist; Mechanical Drafting; Medical Office Assisting; Nursing, Practical; Piano Tuning and Repair; Welding.

Certificate

The purpose of these programs is to provide special study in health-related and career-oriented fields. The following Certificate curricula are available: Data Entry Operations; Early Childhood Aide; Food Service Specialist; Insurance; Medical Transcription; Nursing Assistant; and Pharmacy Technician.

Basic Studies/Preparatory Programs

Advancement Studies

Advancement Studies is a program for students who have not reached mastery level in reading, mathematics, biology, chemistry, writing skills or study skills.

The Advancement Studies Division's philosophy is that each student has unique educational needs and goals. Once these goals are identified they can best be reached by allowing students to progress at their own pace in an open, caring atmosphere.

Each course in the Advancement Studies Division has stated objectives and a system to help each individual accomplish those objectives. Instructors coordinate each learning segment.

For a complete description of courses, see BIO, CEM, CHM, DEN, DRG, EDU, ENG, MAT, PER, PTL, and RDN within the 9000 series in the course description section of this catalog.

Adult Basic Literacy Education (ABLE)

ABLE is a literacy program which offers an innovative approach for adults who cannot read, write or calculate at an adult level. The program combines the use of microcomputers, video systems, audio tapes and specialized programming to teach adults reading and math skills below a ninth grade level. Instructors and tutors work one-on-one or in small groups to guide students through program materials and help with use of the equipment. Instruction in the ABLE program is free and adults (18 years or over) may register for the program during any hours. The Centers are open from 9 a.m. to 9 p.m. Monday through Friday. The ABLE program seeks to combat adult illiteracy by amassing an array of educational media and teaching techniques in one location. The ABLE method speeds the educational process of adult non-readers and enhances their chances for success.

Adult Basic Education (ABE)

Adult Basic Education offers scheduled classes on campus and at many community locations to provide learning experiences which meet the basic education needs of adults in Mecklenburg County. The ABE course is designed to provide learning experiences for adults 18 years old and older whose educational achievement is less than ninth grade, with special emphasis on those adults whose achievement is less than fifth grade. The ABE course also provides experiences which are intended to meet social and personal needs of adult students. The ABE curriculum is a comprehensive curriculum which takes cognizance of the diversity of needs, interests, abilities, and desires of participating adults. Included in the curriculum are the communicative skills of reading, writing, listening, and talking. Also included with equal emphasis are arithmetic, social studies, health and hygiene, elementary science, consumer education, and other areas of interest to the students.

English As A Second Language

The International Culture Department offers courses which enable students to master English as a second language. Students study the customs and traditions of American culture while learning the language. Students will have the opportunity to take other academic and/or vocational courses when their language proficiency allows it.

English as a Second Language courses are found in the course description section of this catalog under ESL. For a suggested sequence of courses by quarter, call or go by the International Culture Department, Kratt 207-A, 342-6434.

General Educational Development (GED)

The GED offers another route for students who have not completed high school. A State high school credential is issued by the North Carolina State Board of Education after a student passes five individual tests in English, mathematics, science, social studies, and reading. A pre-test is used to indicate performance levels and provide the basis for assistance. CPCC offers GED classes on campus, as well as in off-campus centers. These classes are self-paced and allow students to progress at their own learning rates and on schedules which best suit their needs. There is no charge for the pre-test or for the classes; a $5.00 fee is charged for the Tests. For more information anout GED, call 342-6949.

High School Completion, Adult (HSC)

Adult High School Completion leads to an earned diploma granted by the Charlotte/Mecklenburg Board of Education. For graduation, the Board requires four units of English, two units of mathematics, two units of American and world history, one unit of biology, two units of other sciences, and a passing score on the North Carolina Competency Test. Students who have not met each of those requirements enroll for at least one quarter of study in appropriate areas. After one quarter, a standardized or teacher-made test is given. A satisfactory test score earns credit toward graduation for that entire subject. There is no charge for these classes. For HSC information, call 342-6778 or 342-6688.

Human Resources Development (HRD)

The purpose of the Human Resources Development Program is to help the unemployed and the underemployed in our community to prepare themselves for the labor market at a level compatible with their skills and abilities.

HRD teaches students how to set goals: short term and long range. Problem-solving methods are also practiced in the classroom, such as conflict reducing skills that pertain to job-related situations. These processes are essential for employees to be more valuable to themselves and their employers.

HRD teaches students the proper methods for completing employment applications and resumes, as well as

discussing and role-playing job interview techniques. For further information, call Jeff Sechrist, 342-6969.

Charlotte Area High School Students at CPCC

Two programs enable students in Charlotte area high schools to take courses at CPCC:

The Concurrent Enrollment Program enables qualified students who are at least 16 years of age and who are enrolled in Charlotte area high schools to take courses at CPCC for remedial purposes, for high school credit, for personal enrichment, or for college credit. Application of CPCC courses for high school credit must be arranged with the high school principal.

Concurrent enrollment forms may be obtained from the principal's office. Students participating in this program must have the principal's signature indicating that they are in good standing, are at least 16 years of age, and have approval to register for the courses listed on the form. The form is then presented when the student registers at CPCC.

Concurrently enrolled students are regarded by CPCC as any other college student and they receive the same services. Grade reports are mailed to students following the close of each quarter. Copies of the student's transcript are available through the Office of Student Records (Terrell Building, Room 200, 342-6959).

For more information, call 342-6784.

The College Experience Program is an agreement between the Charlotte/Mecklenburg School System and CPCC which enables rising high school seniors to enroll for approved courses at CPCC as part of their high school class schedule during their senior year. The courses approved for this program meet the objectives and criteria set forth by the State Department of Community Colleges Cooperative Programs. Credits earned in this program may be applied to both high school and college.

Students in this program are regarded by CPCC as any other college student and they receive the same services. Grade reports are mailed to students following the close of each quarter. Copies of the student's transcript are available through the Office of Student Records (Terrell Building, Room 200, 342-6959).

For more information, contact the high school guidance office.

Corporate Services

Mecklenburg County, the service area for CPCC, has a high industrial growth rate as many quality companies, foreign and domestic, have moved here in recent years. Other established companies have had substantial growth. Alike, they appreciate our supportive local and state governments, receptive community, and excellent transportation.

And they realize that nothing is more important to a company's future than an abundant source of enthusiastic people and proven training programs, such as those offered by CPCC. Corporate Services at CPCC serves to bridge the gap between business, industry, and skills training when and where it is needed. Corporate Services assists industry and community in building an up-to-date, productive workforce.

Consortium—Charlotte Area (Students Attending Area Colleges and Universities)

CPCC is a member of the Charlotte Area Educational Consortium, along with 11 other area colleges and universities, and participates in a wide variety of Consortium activities including a cross-registration program that enables students to take at other colleges certain courses not offered at CPCC. Information is available by calling 342-6908.

Instructional Telecommunications

Instructional Telecommunications offers educational opportunities through non-traditional modes of education, *i.e.,* TV, radio, computers and newspapers. Through these media Instructional Telecommunications seeks to provide quality courses for persons from varied socio-economic backgrounds. It encompasses a variety of teaching devices, strategies, methods and course objectives which can reach a greater number of students. Instructional Telecommunications embodies the belief that technological equipment and systems are available to make learning more accessible to mid-career adults, homemakers, homebound and/or physically impaired persons who do not find the main campus or Area Learning Centers readily accessible.

Television and radio courses carry college credit for students who register, who meet a required number of times with the instructor, and who pass required exams given in the Testing Center on campus or in off-campus Learning Centers. The only difference from traditional courses is that students view and hear lectures at home. Cost for courses through the Instructional Telecommunications Program is the same as for traditional courses.

Because television, radio and newspapers reach such large audiences and because there are fewer limits on numbers of students based on classroom size, Instructional Telecommunications courses have the potential to be the most flexible of instruction available. For more information, call 342-6943.

Non-Credit Courses (Extension/Continuing Education)

These courses strive to meet the needs of adults by providing cultural, enrichment and general interest courses. Also, the College offers occupational extension courses to those who want vocational training, retraining or upgrading. No college credit is granted for these courses; however, Continuing Education Units (CEU) are awarded upon completion of many of them. Businesses, associations, clubs and individuals often help in designing new courses to meet

ever-changing needs in the Metrolina area. Call the Custom Course Center, 342-6600, for more information.

Older Adult Program

The primary goal of the Older Adult Program is to provide direct educational services to older adults in Mecklenburg County. Older adults must be over age sixty-five and North Carolina residents in order to attend classes without paying tuition. Special classes may be set up at churches or community centers.

Short Summer Session

Short Summer Session allows students from other colleges and universities to take transfer and other courses during their summer vacations. High school graduates can begin their college careers in these six-week concentrated sessions prior to beginning the Fall term at CPCC or transferring to another school. Students who are currently enrolled in high school can participate in CPCC's Concurrent Enrollment Program during Short Summer Sessions, as well as during other quarters.

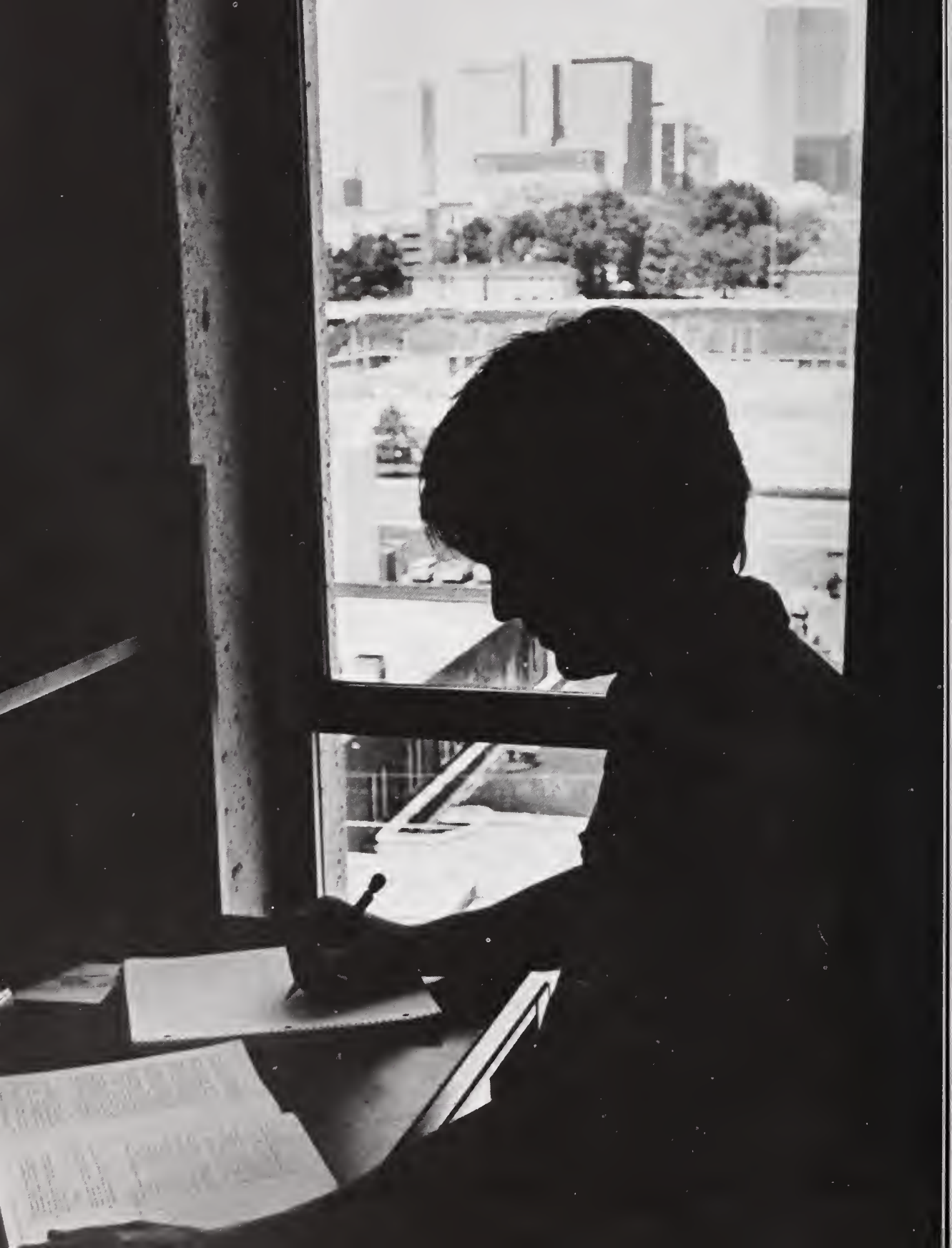
Small Business Center

The Small Business Center, located on the second floor of the Citizens' Center, offers support to individuals who want to start a small business or who need help to stay in business. It does this by determining the needs of area small businesses, providing information (Small Business Library), referrals, classes and seminars to meet those needs, and working with various community agencies: the Small Business Administration; the Greater Charlotte Chamber of Commerce; the Federal and North Carolina Departments of Commerce; and the Minority and Women Business Owners Association. The Center acts as a central clearinghouse to refer small business owners/managers to specific sources of assistance which will meet their special needs. For more information call 342-6900 between 8 and 5.

Weekend College

Weekend courses offer a variety of topics and workshops each quarter, and essentially fall into two formats: classes which meet on Saturdays for an 11-week period; and classes which meet on Friday evenings and Saturdays for fewer than 11 weeks (usually three to five weeks, depending on subject matter).

TUITION
FEES
FINANCIAL AID



Tuition/Fees/Financial Aid

Since the College receives financial support through local, state and federal sources, tuition is very low. Tuition charges are set by the North Carolina State Board of Community Colleges and are subject to change without notice.

Tuition

For ***in-state students*** registered for credit courses, tuition and fees are as follows:

Students enrolled for 12 quarter hours or more—$51.00 per quarter. Students enrolled for fewer than 12 hours—$4.25 per quarter hour.

Non-credit courses in the Continuing Education program are charged a registration fee of $10.00 to $19.00 per course based on the course classification. There is no charge for individuals taking extension courses leading to a high school diploma or its equivalent. Self-supporting courses are charged for at the rate of $1.25 per contact hour. Tuition and the Student Publication Activity Fee ($2.00) must be paid at registration with cash, check or credit card (Visa, MasterCard or Choice).

Out-of-state students will pay tuition each quarter as described below:

Students enrolled for 12 quarter hours or more—$255.00 per quarter. Students enrolled for fewer than 12 hours—$21.25 per quarter hour.

Fee

There is a Student Publications and Activity Fee of $2.00 per student per quarter. This fee is used to support CPCC's publications: the student newspaper, a yearly publication of student poems, short stories and essays, and a Student Handbook, available through the Student Association in Taylor Hall.

The fee also helps support CPCC's forty clubs, special fun days, entertainment, and men's and women's athletic club teams.

Student Insurance (Optional)

CPCC has approved an Accident Medical Plan for students. The plan insures students against loss resulting from accidental bodily injuries sustained while on campus or while participating in or attending an activity exclusively organized, sponsored and solely supervised by the College and College employees, including travel directly to or from such activity in a vehicle furnished by the College.

The plan pays the cost of medical and surgical treatment, including hospital confinement and the service of a trained nurse, for such treatment incurred within one year from the date of accident, up to $1,000 for each accident.

Coverage begins at the time tuition and the $1.50 insurance fees are paid at registration. Coverage ends at the end of that quarter.

Tuition Refund Policy

Students will have their entire tuition refunded if they withdraw from class(es) before the end of the schedule adjustment period. ***Exceptions:*** Tuition will not be refunded for self-supporting classes or classes numbered 7000-8000.

Two-thirds (2/3) of students' tuition will be refunded if they totally withdraw from the College by the 10th calendar day after the first day of classes. ***Exceptions:*** Tuition will not be refunded for self-supporting classes or classes numbered 7000-8000.

If students withdraw from a class(es) after the 10th calendar day following the first day of classes, no refund will be given.

If a class is cancelled by the College, tuition will be automatically refunded by mail on a proportionate basis through the Business Office (allow six weeks).

Residence Status

A legal resident of North Carolina is one who has domicile in the State. It is important that all applicants for admission and all enrolled students know their residence status for tuition payment, and understand the regulations governing status. The "Student Residence Manual" is available for review in the Office of Student Records (TE 200). The following regulations cover most situations:

1. Persons 18 years of age or older are not deemed eligible for the lower tuition rate unless they have maintained legal residence in North Carolina for at least the twelve months preceding the date of their enrollment in an institution of higher education in this State.

2. The legal residence of a person under 18 years of age at the time of enrollment in an institution of higher education in this State is that of the student's parents, surviving parent or legal guardian. If the parents are divorced or legally separated, the legal residence of the minor is that of the parent to whom legal custody has been awarded.

3. The residence status of all students is determined as of the time of their enrollment in an institution of higher education in North Carolina and may not thereafter be changed except: (a) in the case of a non-resident minor student at the time of enrollment whose parents have subsequently established legal residence in North Carolina; (b) in the case of a resident who abandons legal residence in North Carolina; and (c) in the case of a non-resident student at the time of enrollment who has established legal residence in North Carolina and has maintained that status for the preceding twelve months. ***Please note:*** Students previously classified as non-resident who feel they now meet the residence requirements must contact the Director of Student Records for approval and for completion of the proper change of residence form.

4. Aliens who have been lawfully admitted to the

United States for permanent residence in North Carolina, according to the above paragraphs, are eligible for the lower tuition rate. A person holding a student visa cannot be classified as a resident for tuition purposes.

Foreign nationals holding an Alien Registration Card (Form I-151) and other foreign non-immigrants holding work permits (Visas A, E, G, I, K or L-1), as well as Southeast Asian Refugees, may be eligible for in-State tuition twelve months or more after their visa was issued. In these cases, they must provide documenting evidence that they have lived in North Carolina for at least 12 consecutive months (i.e., a statement from a telephone company indicating that they have had a telephone in their name at the place of residence for at least 12 months, a statement from their employer that they have lived and worked in North Carolina for at least 12 months, or other acceptable documentation).

5. Ownership of property in or payment of taxes to the State of North Carolina apart from legal ownership will not in itself qualify a person for the lower tuition.

6. Any students or prospective students who have reason to believe they have been classified incorrectly for higher tuition must bear the responsibility for securing a ruling by stating their case in writing to the Director of Student Records or the Director of Registration. Written request for a ruling shall be reviewed by the Vice President for Administrative Services or the Vice President for Student Development who may contact the student in order to secure additional information. Upon receipt of this ruling (if unfavorable), the student may appeal to the College Appeals Committee by making written request to the Director of Student Records and completing the Residency Questionnaire as prescribed by the "Student Residency Manual." A final residentiary decision by the College may be appealed to the State Residence Committee.

Financial Aid: Procedures

Students who are enrolled or accepted for enrollment in at least a six-month program leading to a certificate, diploma or degree may apply for financial assistance. Individuals who are not U.S. citizens or who are non-permanent residents are generally not eligible to receive financial aid. Check with the Financial Aid Office (Terrell Building, fifth floor) for determination of eligibility.

In considering an applicant for aid, the student's entire living expenses are taken into account, in addition to tuition and book costs. Students taking fewer than 12 credit hours but at least six credit hours may receive aid reduced in proportion to their academic load. Awards generally range from $400 to $7,000 per year and come from one or more of the following sources:

Pell Grants; The College Work-Study Program; Local Scholarships; North Carolina Student Incentive Grants; Supplemental Educational Opportunity Grants (SEOG); Guaranteed Student Loans; National Direct Student Loans; and Emergency Short-Term Loans.

Pell Grants and employment through the College Work-Study Program comprise the majority of aid awarded to students.

Because Central Piedmont Community College defines its academic year as 12 months, financial aid awards are made on that basis. Students are encouraged (in some cases required) to attend consecutive quarters until the program of study is completed in order to remain in proper sequence. The Summer quarter is a full quarter with no significant reduction in course offerings and is not regarded to be "optional" as summer periods often are at traditional institutions.

For more detailed information about the types of aid available, eligibility, application procedures and policies, refer to the ***Student Financial Aid*** brochure, which is published annually. Brochures are available from the Financial Aid Office upon request. This office is located on the fifth floor of the Terrell Building. Telephone 342-6942.

Satisfactory Progress

To remain eligible to receive Title IV financial aid funds, students must meet the College definition of SATISFACTORY PROGRESS. This definition reads: ***"Satisfactory Progress is defined as the satisfactory completion (grades of "C" or higher) of either a minimum of six credit hours per quarter or 50% of the credit hours carried (whichever is less) within the number of quarters derived by dividing the total credit hours required for graduation in a program by six credit hours."***

Any quarter during which a student receives financial aid shall be counted, including previous quarters in which no aid was received. At the end of the number of quarters derived from the calculation above, all financial aid will be discontinued. Course withdrawals, incomplete grades, and repeated courses count adversely in the calculations. Students who change programs will assume the time limit calculated for the new program, minus the number of quarters already attended. Work transferred from other institutions is not considered in CPCC's definition of Satisfactory Progress. Students with extenuating circumstances may appeal as outlined below. This revised policy is effective January 1, 1986. This definition affects only eligibility for financial aid and is not applicable for purposes of continued enrollment in a program, since such determinations will be made by the College in accord with institution policy.

Probation

Financial aid recipients will be granted a one-time, one-quarter probationary period following their first quarter of failure to make satisfactory progress.

Students who fail to make satisfactory progress during the one-time probationary quarter will not be reconsidered for aid until their progress is again satisfactory.

Students with extenuating circumstances are encouraged to use the appeal process.

Appeal Process

Students who fail to meet the definition of satisfactory progress and/or other policies and who have extenuating circumstances may appeal to the Financial Aid Committee for reinstatement. The appeal must be in writing and will be voted on at a regularly scheduled meeting.

Financial Aid: Sources

North Carolina Student Incentive Grants

Legal residents of North Carolina accepted for enrollment or enrolled full-time, in good standing, in an undergraduate program of study in an eligible college, university, technical or vocational school in North Carolina may apply for Student Incentive Grants to help pay their educational expenses. Students must demonstrate "substantial financial need" as determined through the need analysis system of either the College Scholarship Service or American College Testing Program. The amount of each grant will be based on the individual student's demonstrated financial need in relation to resources and cost of education but may not exceed $1,500 per academic year. Students must apply before March 1. This grant is not available during the Summer quarter.

Pell Grants

The Pell Grant Program provides federal funds for qualified students enrolling at least half-time in a program which is at least six months long in an eligible institution of higher education. The grants, which do not have to be repaid, are based on schedules and formulae approved by Congress annually. The maximum grant at Central Piedmont Community College is approximately $1,350 per year for in-State residents and $1,830 for out-of-State residents. Students with Bachelor's degrees are not eligible.

Supplemental Educational Opportunity Grants

The Supplemental Educational Opportunity Grant Program provides gift aid to students with demonstrated financial need. The amount of the grant is based upon the applicant's need and availability of funds at the College, and generally averages $400 per year. These grants do not have to be repaid. Students with Bachelor's degrees are not eligible.

The College Foundations, Inc. Loans

The College Foundation, Inc., Raleigh, North Carolina, administers several loan funds, including the Guaranteed Student Loan Program. Legal residents of North Carolina who are attending at least half-time at an institution of higher education are eligible to apply. Independent students and dependent students may borrow up to $2,500 per year. The Federal Government will pay the 8% interest on the loan while the student is in school and before repayment begins for students who qualify for federal interest benefits. The minimum repayment is $50.00 per month, plus interest, and the loan must be repaid within 10 years. Applications may be obtained from the Financial Aid Office.

Emergency Short-Term Loans

A limited amount of money is available to assist students in emergency situations. Assistance of this type is generally limited to $50, or tuition and fees, whichever is less, and must be repaid within 90 days.

National Direct Student Loan Program

Central Piedmont Community College participates in the National Direct Student Loan Program. This program makes funds available to students who are taking at least a half-time schedule in one of the diploma or degree programs and who need a loan to meet educational expenses.

The National Direct Student Loan Program makes provisions for students to borrow up to $2,500 during their first two years of college. Repayment begins six months after the borrower ceases to pursue a course of study at an institution of higher learning, and 5% interest per year is charged on the unpaid balance.

Scholarships

Students do not usually apply for specific scholarships at Central Piedmont Community College. All qualified applicants are considered for available scholarships. The total value of a scholarship awarded to a student is payable in amounts prorated to each quarter of the College year. Awards are based upon financial need and/or academic proficiency. An award for the second year may be made upon approval of a new application and continued satisfactory academic performance. A complete listing of the scholarship donors can be found in the *Scholarship and Short Term Loan Fund* brochure available upon request from the Financial Aid Office.

Work-Study Program

A major form of financial aid available to students consists of employment through the College under the Federal College Work-Study Program. A schedule is arranged so that students work part-time around their classes either on-campus, at Area Learning Centers, or at a non-profit agency in the Charlotte-Mecklenburg area. The hourly pay rate is equal to at least the Federal minimum wage, and the average number of hours students may work generally does not exceed 20 hours per week.

Financial Aid: Veterans, Eligible Persons, Selected Reserves, and National Guard

The College provides educational opportunities for veterans, disabled veterans and eligible persons (spouse and/or dependents) of deceased or disabled veterans, those

missing in action, and prisoners of war on both the college and high school levels. For additional information regarding these benefits which are administered by the Veterans Administration, persons should contact one of the following offices: the County Veterans Service Office, the District Office of the North Carolina Department of Veterans Affairs, the Veterans Administration Regional Office, Winston-Salem, N.C., or the College Office of Veteran Affairs (Terrell Building, second floor).

Members of the National Guard and Selected Reserves are eligible for educational assistance under a new G.I. Bill which began July 1, 1985 and will continue through June 30, 1988. Benefit payments are administered by the Veterans Administration. For information, contact respective National Guard or Selected Reserve command, the Veterans Administration, or the College Office of Veteran Affairs.

The College also assists recipients of North Carolina Veterans Commission Scholarships. Students seeking these scholarships should contact the state office, district office, or the College Office of Veterans Affairs (Terrell Building, second floor).

Academic Requirements

The Veterans Administration has determined that the College has a ***"non-punitive" grading policy*** for veteran benefit purposes. A veteran/eligible person must pass required program courses for VA benefits unless there are mitigating circumstances acceptable to VA. Grades that are excluded from calculation in graduation requirements are prohibited under this policy.

Class attendance is necessary. "Full-term" attendance is expected through the last scheduled class session of the quarter. CPCC instructors are required to report promptly the ***last date of attendance.***

Reporting Procedures

Guidelines in reporting requirements to VA:

a. Veterans will not be penalized for official drops or withdrawals during a VA-established drop/add period of 30 calendar days.
b. Pay adjustments for unofficial drops at any time, and official drops or withdrawals after 30 days, will be retroactive to the first day of the quarter unless there are mitigating circumstances acceptable to VA.
c. Pay adjustments for ***"never attended"*** will be retroactive to the first day of the quarter or the last day of the previous enrollment, whichever is applicable.
d. No pay will be awarded for any IM, IR or W unless there are mitigating circumstances acceptable to VA.
e. Documentation may/will be required by VA for any mitigating circumstances.
f. Any overpayments will have to be repaid to VA.

Mitigating Circumstances

Some examples acceptable to VA: (This list is not all-inclusive, according to VA.)

a. Demonstrated "good faith" pursuit. This includes evidence of receipt of tutorial, adviser or counseling services.
b. Accident, illness (personal) or death (immediate family).
c. Military, National Guard or Selected Reserve duty training.
d. Job conflict or financial problems requiring changes in employment, class schedule adjustment or drops which precluded satisfactory pursuit of course.

For All Veterans

Veterans are responsible for notifying the College Office of Veteran Affairs and the Veterans Administration immediately of any change in their student status, such as drop/adds, stopped attendance, withdrawal, program changes or graduation. All status changes and course-load adjustments for poor attendance will be reported to the Veterans Administration promptly. There will be no reinstatements for non-attendance for the quarter in which it was reported, unless there are mitigating circumstances. For further information, contact the College Office of Veteran Affairs.

Degree and Diploma Veterans

Instructors are required to submit "CPCC Veterans Exceptional reports" through their department head or vice president to the College Office of Veteran Affairs immediately after a student has missed two consecutive weeks or stops attending before the end of the term.

Diploma Veterans

Diploma Veterans (trade, adult high school, and GED) are required to turn in attendance sheets each month. They are due no later than the fifth of the following month and the last day of each quarter. Failure to turn in this report will result in prompt termination of benefits.

National Guard and Selected Reserves

Academic requirements, reporting procedures, mitigating circumstances, and other information regarding veterans and eligible persons will apply to National Guard and Selected Reserves. However, no benefits are available for dependents in high school equivalency programs and developmental courses.

Records

"Records of Progress" are kept by the College on both veteran and non-veteran students. Progress records are furnished to all students, veteran and non-veteran, at the end of each scheduled school term.

NOTE: Veterans may attend CPCC as regular students regardless of their VA benefit status. Veterans should see other information in this catalog concerning all students.

Social Security Administration And Other Government Agency Benefits Programs

The College provides advisement and certification services for students (adult basic, high school and college levels) who are eligible for Social Security, Civil Service, Railroad Retirement, N.C. National Guard, Active Military Personnel, and Selected Reserve Tuition Assistance. Students seeking assistance under these programs should contact the respective agency or the College Office of Veterans Affairs.

STUDENT SUPPORT SERVICES

Student Support Services

Drop-In Center

The Drop-In Center is a warm and friendly place where students can get help from specially trained fellow students. The Center is located on the second floor of the Learning Resources Center and is open from 7:30 a.m. until 7:30 p.m. Monday through Thursday; 7:30 a.m. until 4:30 p.m. on Friday.

First Aid Team

Central Piedmont Community College's first aid team consists of faculty and staff volunteers. Team members are certified in Standard First Aid and CPR. Two members are on duty from 8:30 a.m. until 4:00 p.m. Monday through Friday. The telephone number for on-campus medical emergencies is 6444.

Housing

The College does not provide living accommodations for students. In all cases, students are responsible for making their own arrangements for housing.

A card file of available rooms and apartments is maintained in the Office of Student Activities (Taylor Hall, Room 102). Many of these accommodations are within walking distance of the College or are conveniently located to bus service. Students should be aware that the College does not verify or endorse information in this card file.

Lost and Found

On campus, a lost and found service is located on the second floor of the Terrell Administration Building at the Admissions Center. Inquiries regarding lost items should also be directed to the receptionist areas of other buildings on campus.

Mini-Courses

Mini-Courses are short, free audio-visual programs. They are for those who wish to learn part of a subject or skill without taking the entire course. General topics include: behavioral science; business; communications; consumer information; health; cash register and adding machine operation; mathematics; mechanics/shop skills; natural science, and social science. For specific topics or information go by the Leaning Resource Center, third floor, Audio-Visual Center, Monday-Thursday, 7:30 a.m. to 9:00 p.m.; Friday, 7:30 a.m. to 5:00 p.m.; or Saturday, 9 a.m. to 1 p.m., or call 342-6708.

Physical and Recreational Activities

Pool and table tennis tables and game machines are in the Recreation Center, which is located in Taylor Hall just to the right of the main lobby. The Recreation Center is open from 8:30 a.m. until 8:00 p.m., Monday through Thursday, and from 8:30 a.m. to 4:00 p.m., Friday.

The multi-purpose room is on the left of the main lobby in Taylor Hall. There, students may exercise and play basketball, volleyball and badminton. There are also weight rooms, exercise rooms, lockers and showers. The open hours are posted and vary according to the class schedule.

These recreational facilities are available only to enrolled students with current ID's.

Program Awareness Tapes (PAT)

From 6 p.m. until 7 a.m. daily, telephone calls to certain CPCC numbers will activate a tape explaining various programs, requirements, job outlooks, and how to get started in the program. The CPCC Class Schedule carries a list of these programs and telephone numbers.

Reading Clinic

The Reading Clinic operates on a walk-in basis to provide reading assistance to students. The Clinic is located on the second floor of the Learning Resources Center and provides diagnostic and referral services for students who wish to improve their reading skills. The Clinic also provides tutoring for those in need of basic reading instruction.

Social and Cultural Events

The Department of Student Activities, working with the Student Government Association, plans and sponsors various social and cultural events during the year. Included in these activities are concerts, lectures, field days, athletic events, music and drama productions.

Special Services

Reasonable Accommodation

CPCC believes that a meaningful educational experience can result only when the College and the student make reasonable efforts to provide an accessible educational environment. The College is also concerned with the possibility that over-accommodation may in the long run be detrimental to a student's development. Therefore, students are encouraged to develop skills for independent living and independent action.

Pre-Admission Interview and Campus Visit

Before a student makes the final decision to enroll at CPCC, the College recommends that all disabled students plan to visit the campus to meet the specially assigned counselors and support personnel, meet and talk with other students, and make other necessary arrangements such as housing. During this interview and visit, the counselors and staff will explain the instructional methods and approaches adopted by the College and how these methods relate to the

disabled student. In addition, student responsibilities and College expectations of the student will be discussed.

Assessment and Evaluation

A screening test and/or interview is administered to those students who demonstrate a learning difficulty. Those who demonstrate a discrepancy among the various learning areas (functions) receive a battery of diagnostic tests to determine the specific learning disability. The results of this evaluation are utilized in designing and implementing the instructional strategies, as well as counseling, tutorial, note-taking, and reader services.

Those students who are not learning disabled but who are unable to complete their studies successfully are referred to other programs which can meet their needs. Such programs may be those of career, academic and personal counseling; study skills training; and tutorial assistance.

Architectural and Attitudinal Barriers

The facilities of CPCC are 98% barrier-free, resulting from the College's long commitment to remove such barriers. The lengthy involvement of the College in providing services to handicapped persons, as well as its experience with such students, has resulted in highly positive attitudes on behalf of the support, instructional and administrative personnel.

Brailling Services

Visually impaired students can request the brailling of instructional support materials, such as tests and handouts.

Counseling Services

Counseling is the most important service component of the entire program. The counselor is the central point in the student's educational experience and is involved in the personal, social, vocational and academic counseling. The counselor is also the main referral point for other services, assisting the instructor and determining the need for tutorial and other services.

Disadvantaged Students

Those students who are not able to succeed because of educational, economic or social deprivation are able to receive the same services which are available to the exceptional student. Those students who demonstrate learning problems, but are not learning disabled, will be served under this category.

Handicapped Parking

A brochure describing campus parking facilities and regulations is available upon request from the Special Services Department.

Interpreting Services

The most critical component for any program for the hearing impaired is interpreting service. The success of the student's educational experience is greatly dependent on the availability, quality and flexibility of these services. The College employs a number of highly qualified and certified interpreters. Certain reasonable schedule adjustments may be necessary periodically in order to accommodate all students.

Optacon

The Optacon (Optical-to-Tactile Converter) is an electronic device by which the visually impaired person can read regular print on a CRT screen. A unit is available at CPCC.

Reader/Writer Service

CPCC will provide to the visually impaired a reader to read textbooks or tests outside of classes. Those students who cannot take notes because of hearing impairment, learning disability, physical impairment, or any other condition, may receive assistance from volunteer note-takers.

Tutorial Services

Tutorial services are provided as a supplement to regular class work and not in place of class attendance. Any student receiving tutorial services must attend classes regularly.

Student Association

The Student Association, of which every registered CPCC student is a member, consists of a Student Government Association and 17 Program Area Committees (PACs). Program areas elect students to the PAC's and, in turn, members of the PAC's are appointed to the SGA. This is a unique concept of student representation and every interested student is urged to participate. A copy of the Student Association Constitution and other information about the Student Association are available in the Student Activities Office (Taylor Hall, Room 102).

Student Employment and Career Planning Center

Placement Advisers assist graduating students in finding employment and assist currently enrolled students in finding full- or part-time work while in school. Assistance is also given in resume writing and interview techniques.

A Career Counselor aids students in establishing career goals by analyzing skills, abilities, interests, values, and behavioral styles.

The Center has a career library to help students research local companies and career possibilities, and a computer career guidance program (SIGI) is available at no cost.

The Student Employment and Career Planning Center is located in the Garinger Building, Room 239.

Student Organizations

The College encourages participation by students in all areas of campus life. Student organizations are chartered by the Student Association and are aided in the planning of their activities by the Director of Student Activities and in the financing of those activities by the Student Association. These organizations include service organizations, special interest groups, athletic clubs, honor societies and professional organizations. A complete list of organizations is

included in *The Student Handbook* or in the Student Activites Office, Taylor 102.

Student Publications

The area of Student Activities utilizes a variety of communication methods, including a *Student Newsletter*, and *The Spark*, a student newspaper (five issues quarterly) to keep students informed of campus activities. The *Literary Magazine*, published annually, serves as a showcase for creative writing and graphics. *The Student Handbook* is published as needed, and contains much useful information for students and serves as a guide to those unfamiliar with the campus.

Further information is available in the Student Activities Office (Taylor Hall, Room 102) 342-6751 or 342-6584.

Sports

Several sports for men and women, indoor and outdoor, make up the intramural program. Basketball, volleyball, badminton and other intramural programs in which students show an interest are played in the multi-purpose room in Taylor Hall. Outdoor sports include tennis, golf and softball. In some of these, individuals are chosen to make up All-Star teams which play area colleges.

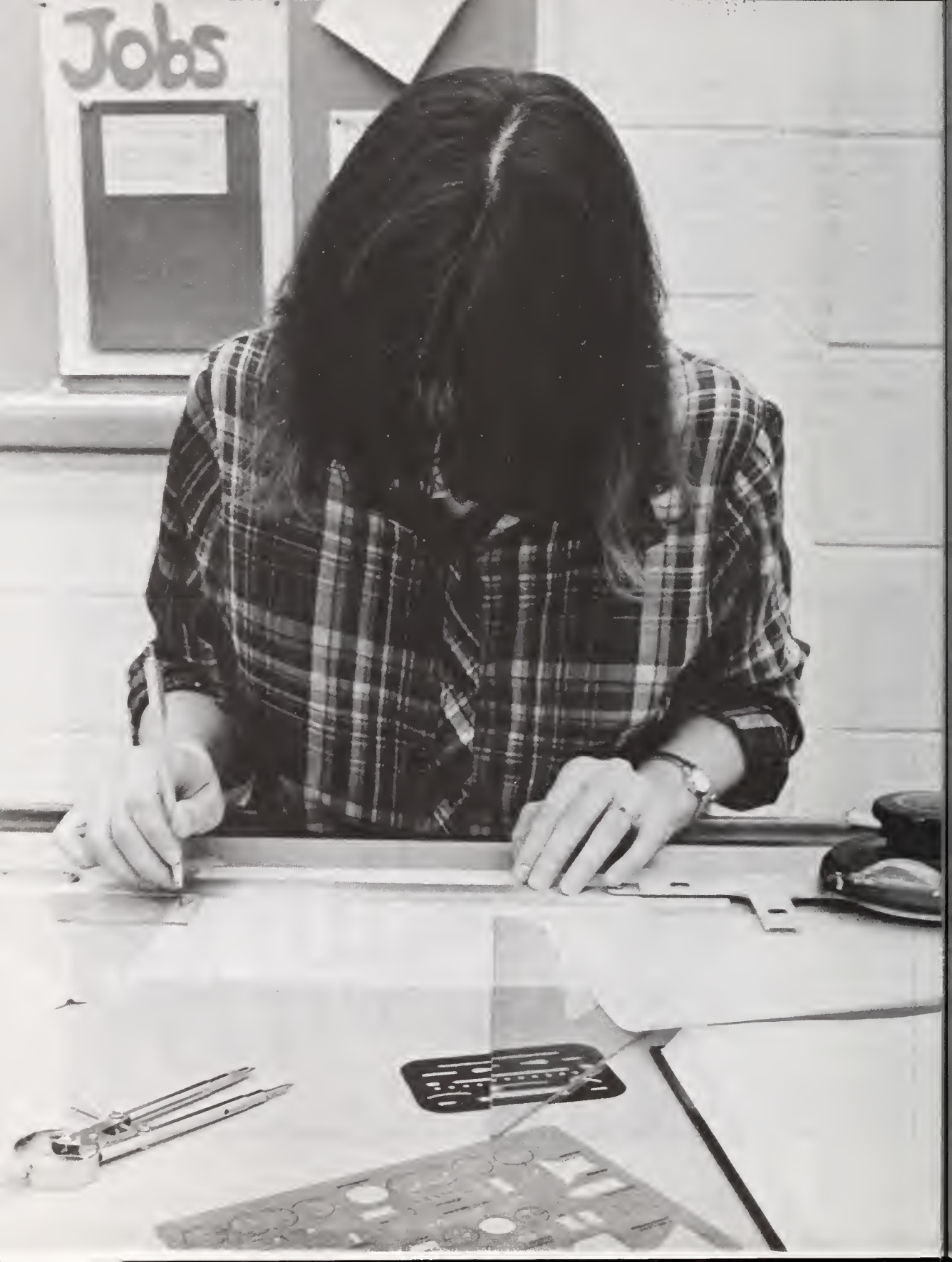
In addition, CPCC has soccer and softball clubs open to all interested students. Information on athletic activities is available in Taylor Hall, room 102, or call 342-6584.

Testing Center

The Testing Center on the fourth floor of the Learning Resources Center administers a wide variety of tests for instructional, placement, diagnostic, and special purposes.

The Center's attractive atmosphere and low-key method of operation help reduce anxiety about taking tests. Course tests are taken within time-frames designated by instructors.

The Center also assists faculty in test development, administration, grading, analysis and research. As a result, improved student competency is reflected in mastery of measurable instructional objectives.


Jobs

GRADUATION

Graduation

Graduation Requirements

Central Piedmont Community College awards degrees, diplomas, and certificates as described below.

CPCC awards four degrees: the ***Associate in Arts***, the ***Associate in Fine Arts***, the ***Associate in Applied Science***, and the ***Associate in General Education***.

Associate in Arts and Fine Arts Degrees

These are two-year degrees acceptable for transfer to senior colleges and universities).

Requirements:

- Completion of a *minimum* of 96 quarter credit hours, including *required* 1000- and 2000-level courses. A *minimum* of 32 quarter credit hours must be earned at CPCC, 16 of which must be the final credit hours prior to graduation;
- Completion of a *minimum* of 32 additional quarter credit hours if the student has previously earned an Associate in General Education Degree;
- Official copies of high school and *all* other college/university transcripts in the student's folder in the Student Records Office.

Associate in Applied Science Degree

Requirements:

- Completion of a *minimum* of 96 quarter credit hours including the required courses in the student's program of study. A *minimum* of 32 quarter credit hours must be earned at CPCC, 16 of which must be the final credit hours prior to graduation;
- Completion of a minimum of 32 additional quarter credit hours if the student has previously earned an Associate in General Education Degree;
- Official copies of high school and *all* other college/university transcripts in the student's folder in the Student Records Office.

Associate in General Education Degree

Requirements:

- Completion of at least four courses from three of the following disciplines (one of which must be English): English, Social Science, Science or Mathematics, Humanities, Performing Arts or Fine Arts;
- A *maximum* of 24 quarter credit hours in 9000 courses may be used;
- Completion of 96 quarter credit hours of college credit courses;
- Completion of 32 additional quarter credit hours of college credit courses if the student has earned another degree;
- A minimum of 32 quarter credit hours hours must be earned at CPCC, 16 of which must be the final credit hours prior to graduation;
- Official copies of high school and *all* other college/university transcripts on file in the student's folder in the Student Records Office.

Diplomas:

Central Piedmont Community College also awards diplomas in various programs.

Requirements:

- Completion of a *minimum* of 64 quarter credit hours of required courses in the student's program of vocational career study;
- The final 15 quarter credit hours must be earned at CPCC;
- Official copies of high school and *all* other college/university transcripts in the student's folder in the Student Records Office.

Certificates:

Certificates for certain courses having specific requirements are awarded by various departments at CPCC.

Processing of Degrees and Diplomas

1. If a student is within two quarters of graduation, including the current quarter of enrollment, a Graduation Check Request Form should be obtained from the Graduation Certification Office in the Terrell Building (Room 218-219), phone 342-6636 or 342-6525.

2. After receiving this form, staff in the Graduation Certification Office review all records in the student's folder and provide the student with a list of courses that must be completed in the final quarter of study, as well as a list of any documentation for the student's folder that is incomplete.

3. Upon successful completion of the final courses required for graduation, a notation of the degree or diploma and the date of graduation is entered on the student's CPCC transcript. Graduates may request copies of their transcripts from the Office of Student Records, Terrell Building (Room 200), whenever it is necessary for them to provide documentation of completed course work and related training for employers and others requiring this information. There is no charge for the first two copies; additional copies are $1.00 each.* Transcripts are not released if the student owes money to the College.

4. Any graduate who would like an engraved degree or diploma, suitable for framing as a memento, needs to fill out a Degree/Diploma Order Form in the Graduation Certification Office (Terrell Building, Room 218-219). This form is then presented to the Business Office with payment of the $10.00* order fee. *All* engraved degrees/diplomas are held for distribution at the annual Graduation Exercises in June. They are mailed thereafter to students who were unable to participate. Students who must have their engraved degrees/diplomas mailed outside the U.S.A. need to make arrangements with the Graduation Certification Office prior to their departure to cover the special postal charges and insurance that will be required.

**NOTE: This cost is subject to change without notice.*

FACILITIES & SERVICES

Facilities and Services

The College is supported by state, federal and local funds and thus is able to provide superior instruction and optimum use of excellent equipment and laboratories at a minimum cost to students. The campus includes parking areas and a learning resources center, classrooms and well-equipped, modern laboratories and specialized shop areas.

Area Learning Centers

Students who want to attend classes in their own neighborhoods will enjoy the convenience of CPCC's Area Learning Centers.

CPCC's four centers are:

West Area Learning Center
Freedom Mall Shopping Center
Charlotte

Matthews Area Learning Center
Matthews Depot Shopping Center
Matthews

North Area Learning Center
Highway 21 North
Cornelius

Pineville Area Learning Center
Park 51 Shopping Center
Pineville

At the College's four Learning Centers, students can register and pay tuition for all CPCC courses; buy their books; and in many cases attend classes or do lab work in business, accounting, advancement studies, and computer science. Each Center also has a complete library of telecourses and audiocourses. Off-campus classes at nearby high schools, churches, community centers and other locations in the neighborhood are supported and coordinated through the Area Learning Centers.

Bookstore

It is the student's responsibility to obtain the required textbooks and supplies prior to the first class meeting. The College maintains a Bookstore from which students may purchase the necessary books and supplies. Any book may be special ordered if not in stock. Other items available for purchase are general books, CPCC imprinted apparel, greeting cards, magazines, candy and snacks, parking tokens and other various sundry items. A copying machine is also located in the Bookstore. The Bookstore will buy used books from students the last week of each quarter.

The Bookstore is open from 9:00 a.m. until 7:30 p.m., Monday through Thursday, and from 9:00 a.m. until 3:00 p.m. on Friday. Extended Bookstore hours will be posted at the beginning of each quarter to accommodate book rush.

Cafeteria (Central Forum)

The Central Forum, operated by Yeager Enterprises, Inc., has a grill service available for short orders and a hot meal service available from 7:00 a.m. until 6:30 p.m., Monday through Thursday, and until 4:00 p.m. on Fridays. Breakfast is served from 7:00 a.m. until 10:30 a.m.

Classrooms, Studios, Laboratories and Shops

In addition to main campus classes, CPCC classes meet in neighborhood churches, schools and office buildings. On the main campus there are many laboratories, shops, studios and specialized areas so students can practice and apply what they learn in the classrooms.

Learning Resources Center

The Richard Hagemeyer Learning Resources Center supports the total instructional program of the College. Available are full information services and instructional production capabilities via cable and closed circuit television, TVRO, teleconferencing, radio, two-way classroom, microcomputers and modules using slides, films, programmed materials, books and periodicals. Appropriate equipment, facilities, and professional expertise afford the employment of any combination of these in behalf of student learning.

Auditorium/Conference Room

Pease Auditorium has 440 seats equipped for note-taking and is also used for plays, concerts and movies. It can be sectioned into thirds to accommodate groups with special needs.

Pease Conference Room, located across the hallway from the Auditorium, is available for small group meetings.

Library

The ***Library***, housed on the third and fourth floors, has a collection of print and non-print materials particularly adapted to the objectives and programs of the College. Resources of the Library include reference books, bound and unbound periodicals, pamphlets, microforms and audio-visual materials, in addition to the general book collection and a collection of mini-courses for independent study. Micro-form readers and copying machines are included in services provided. An Audio-Visual Center on the third floor contains materials of all types, equipment for viewing or listening, and browsing opportunities for those interested. An open-shelf arrangement is used to stimulate interest and to provide easy access to the collection of print and non-print materials. There are frequent displays on subjects of special interest. Resources of other libraries in the Charlotte area and statewide are available to faculty and students through inter-library loans. DIALOG, an on-line bibliographic retrieval system, permits access to millions of references on over 200 databases in a variety of subject fields. The Library

is staffed by trained librarians who are aided by paraprofessional staff, clerical personnel and student assistants. Students are urged to become familiar with the regulations which have been established for the benefit of all who use the Library. These procedures appear in the Student Library Bulletin and are available at the reference desk, third floor, Learning Resources Center.

The ***Telecourse Center***, located on the ground floor of the Learning Resources Center, is a service center with two major functions: it serves as the lab for courses offered over local television and it also houses a variety of outstanding video programs to inform, educate and inspire both faculty and students.

The Microcomputer-Tutor Laboratory, located on the second floor, houses microcomputers for use with Micromate and other programs on hard discs. Student orientation to microcomputers and other tutorial services are provided.

Parking

The campus includes paved and well-lighted parking areas. Students may use these parking lots except those reserved for faculty. Access to student lots is controlled by "free-in, pay-out" gates which operate automatically. This type of procedure requires students to deposit tokens in the appropriate receptacle on leaving a parking lot. The gate will then raise to enable the individual to leave. Tokens may be purchased at the Bookstore, the Business Office, or from a machine in the parking deck or on the second floor of the Terrell Building.

As an additional protection to students, their cars must be registered each year at fall quarter registration or whenever the student first registers. Each student is given a Central Piedmont Community College sticker, at no charge, that is to be placed on the rear bumper.

Brochures explaining parking regulations at CPCC are available at the Registration Center, the Admissions Center, and at the Area Learning Centers.

THE COLLEGE

The College

Philosophy and Objectives

The doors of Central Piedmont Community College are open and accessible to all adults seeking to further their education. The College recognizes its responsibility to the community by providing general services to the surrounding area; by helping individual students recognize their potential as worthwhile and productive members of society; by providing opportunities for students to develop their physical, intellectual, and aesthetic capacities according to their individual desires to pursue an education; and by assisting students to attain goals consistent with their needs, interests and abilities.

The College seeks to implement its philosophy by:

1. Providing the first two years of study in the liberal arts and pre-professional fields for those students who wish to transfer to four-year colleges.
2. Providing occupationally-oriented programs for those students who wish to enter employment in the technologies.
3. Providing occupationally-oriented programs for those students who wish to be employed in business and commerce.
4. Providing occupationally-oriented programs for those students who wish to enter employment in health-related fields.
5. Providing occupationally-oriented programs for those students who wish to enter employment in public service areas.
6. Providing occupationally-oriented programs for those students who wish to enter employment in the skilled trades.
7. Providing a program of general education for the social, cultural and personal development of those individuals wishing to continue their education beyond high school.
8. Providing single or combination courses needed by adults in the community to update their occupational capabilities to meet the challenges of a changing technological society.
9. Providing courses for the individuals whose education stopped short of high school graduation and for those who wish instruction in home and family education and leisure-time activities.
10. Providing counseling and guidance services to all students.
11. Providing community educational services for organizations and individuals—including speakers, concerts, resource personnel or materials, special institutes or programs and reading lists as requested.

The College is aware that the implementation of these objectives in an open-door admission environment will bring to its campus students who differ greatly in age, motivation and purpose, as well as educational and personal backgrounds. The challenge of educating these students cannot be met with traditional methods of instruction alone. In recognition of this fact the following policy statement has been adopted by the Trustees of the College:

"Central Piedmont Community College is committed to the concept that, given enough time, most students can accomplish any learning task. This is based on the concept that students basically differ in their rates of learning rather than their ability to learn.

"This commitment carries with it a resolve that the College must have as a major objective the provision of ample opportunities for students to learn at varying rates. It also implies a belief in the concept of individualized control of the rates of learning."

The Trustees and staff of the College are dedicated to the task of creating the environment for learning which is defined in the above statements of philosophy, objectives and policy.

History

From the beginning, CPCC was different.

Its differences first appeared in the early 1960s, when the newly created college decided to sell the only real campus it had.

Central Piedmont Community College was named in the 1963 N.C. statute which created the system of community/technical colleges. CPCC thus became the first of the 58 community/technical colleges in the system.

At that time, the General Assembly merged outlying Mecklenburg College, which was a small liberal arts institution, with the Central Industrial Education Center, where adults were given vocational and high school training in the old Central High School building.

While other colleges across the U.S. were building traditional suburban campuses around lakes and country settings, CPCC chose a wooded location near the heart of uptown Charlotte so more citizens could reach the college easily. This new institution decided to develop the college at the uptown site and sold the Mecklenburg College site in northwest Charlotte.

CPCC's founding president was Dr. Richard H. Hagemeyer, who had worked in the automotive industry and as an administrator at Henry Ford Community College in Michigan. Dr. Hagemeyer applied industry-tested ideas and innovations to education.

Two of CPCC's major buildings—Kratt Hall and Terrell Building—were built in 1967. That was the first step toward developing a campus of 23 buildings on 33 acres.

Voters showed their support for CPCC through bond issues many times: in 1966, approving $3 million for renovation and construction; in 1968, increasing local support of CPCC to six cents per $100 property valuation; in 1970, approving $4.6 million for land purchases and construction

of the Belk Building; in 1978, approving $1.6 million for a 600-car parking deck; in 1983, approving $2 million for high-tech equipment; and in 1985, approving $2.05 million for a 512-car parking deck and the construction of a learning center in the North Mecklenburg area.

By 1974, CPCC had outgrown its uptown campus. College Trustees decided against asking for more tax dollars to build additional campuses. Instead, they sought to expand CPCC's offerings by setting up learning centers similar to branch banks at Pineville, Matthews, North Mecklenburg and Freedom Mall. Classes are also taught at more than 200 sites around the county—in high schools, churches, community centers, office buildings and other facilities. About one-third of the College enrollment is off-campus.

While the physical growth continued, CPCC's reputation continued to grow as well. Using the latest teaching technology to reach students and to help them succeed was a hallmark of CPCC's years under Dr. Hagemeyer. Instruction by television, radio or telephone and using computers for testing or for drill-and-practice tutoring have been commonplace at CPCC for years. A recent federal grant of $2.5 million will be used to further advance CPCC's ability to use advanced communication technology in teaching and learning and to provide computerized telephone registration.

Because of CPCC's reputation for innovative techniques, individualized instruction and high-quality programs, the College was invited in 1969 to join the League for Innovation in the Community College. The League is an organization of 20 of the nation's leading community colleges, and one in Toronto, Canada. The League's purpose is to develop and share new ways to improve the teaching and learning process.

CPCC's national reputation was recognized in 1985 when it was named in the top five of the nation's 1,219 community colleges in teaching excellence.

Today, CPCC serves about 50,000 different people each year with more than 2,500 classes in liberal arts, career training, continuing education for adults, and employee training for industry.

Dr. Hagemeyer's retirement in June, 1986, capped one of North Carolina's great success stories in education.

Accreditation

Central Piedmont Community College is accredited by:

Southern Association of Colleges and Schools, Commission on Colleges
North Carolina State Board of Community Colleges
American Dental Association: dental assisting and dental hygiene programs
American Physical Therapy Association: physical therapist assistant program
American Medical Association: respiratory therapist program; medical record technology; medical assisting
American Society for Engineering Education
North Carolina State Board of Nursing: associate degree nursing and licensed practical nursing
Technology Accreditation Commission of Accreditation Board for Engineering and Technology: architectural technology, civil engineering technology, electrical engineering technology, electronics engineering technology, manufacturing engineering technology, mechanical engineering technology
Joint Review Committee for Respiratory Therapy Education: respiratory therapy
American Medical Record Association: medical record technology program
American Association of Medical Assisting: medical assisting program

Memberships

Central Piedmont Community College is a member of:

American Association of Community and Junior Colleges
American Society for Engineering Education
North Carolina Association of Junior Colleges
American Council on Education
League for Innovation in the Community College
North Carolina Association of Colleges and Universities
Southern Association of Colleges and Schools.

Academic Divisions/Departments

Accounting Division
- Accounting
- Bookkeeping/Clerical

Advancement Studies
Allied Health Department
- Dental Assisting
- Dental Hygiene
- Physical Therapist Assistant
- Respiratory Therapy Technology-Therapist

Art Division
- Commercial Art—Advertising Design
- Commercial Art—Interior Design

Behavioral and Social Sciences Department
Biology Department
Business Administration Division
- Banking and Finance
- Business Administration
- Postal Service Technology
- Real Estate
- Marketing and Retailing
- Traffic and Transportation

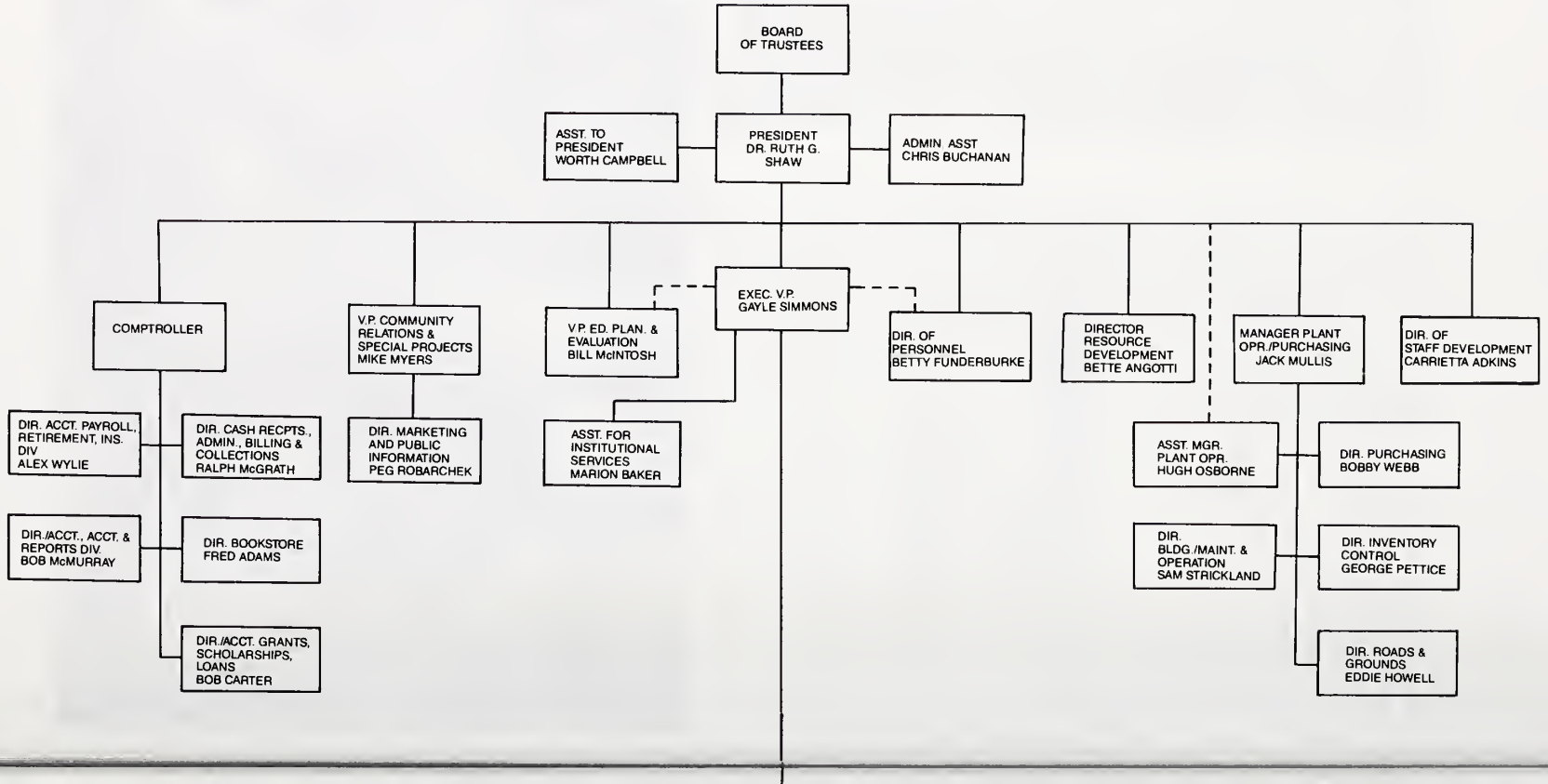
Computer Science Division
- Computer Operations
- Computer Programming, Business
- Data Entry Operations

Health, Physical Education and Recreation Division
- Recreation Associate

Hospitality Education Department
- Food Service Management
- Food Service Specialist
- Hotel/Restaurant Management

- Human and Public Services Department
  - Correctional Services
  - Fire Protection Technology
  - Human Services Associate
    - Early Childhood
    - Social Services
    - Interpreter Training
  - Industrial Safety, Health, Security and Health Management Technology
  - Insurance
  - Law Enforcement
  - Paralegal
- Industry Division
  - Air Conditioning, Heating and Refrigeration Technology
  - Air Conditioning, Heating and Refrigeration
  - Automotive Body Repair
  - Automotive Technology
  - Automotive Mechanics
  - Diesel Vehicle Maintenance
  - Electrical Installation and Maintenance
  - Graphic Arts Management
  - Graphic Arts
  - Machinist
  - Welding
- International Culture Department
- Mathematics Department
- Medical Office and Records Department
  - Hospital Ward Secretary
  - Medical Office Assisting (2 year)
  - Medical Office Assisting (1 year)
  - Medical Record Technology
  - Medical Transcription
  - Pharmacy Technology
- Nursing Department
  - Nursing Assistant
  - Nursing, Associate
  - Nursing, Practical
- Performing Arts and Speech Division
  - Piano Tuning and Repair
- Physical Science Department
- Secretarial Science Department
  - General Office Technology
  - Secretary, Executive
  - Secretary, Legal
  - Secretary, Medical
- Technology Division
  - Architectural Technology
  - Civil Engineering Technology
  - Computer Engineering Technology
  - Electrical Engineering Technology
  - Electronics Engineering Technology
  - Horticulture Technology
  - Horticulture
  - Manufacturing Engineering Technology
  - Mechanical Drafting
  - Mechanical Engineering Technology
- Writing, Humanities and Foreign Languages Division

ADMINISTRATIVE ORGANIZATION
CENTRAL PIEDMONT COMMUNITY COLLEGE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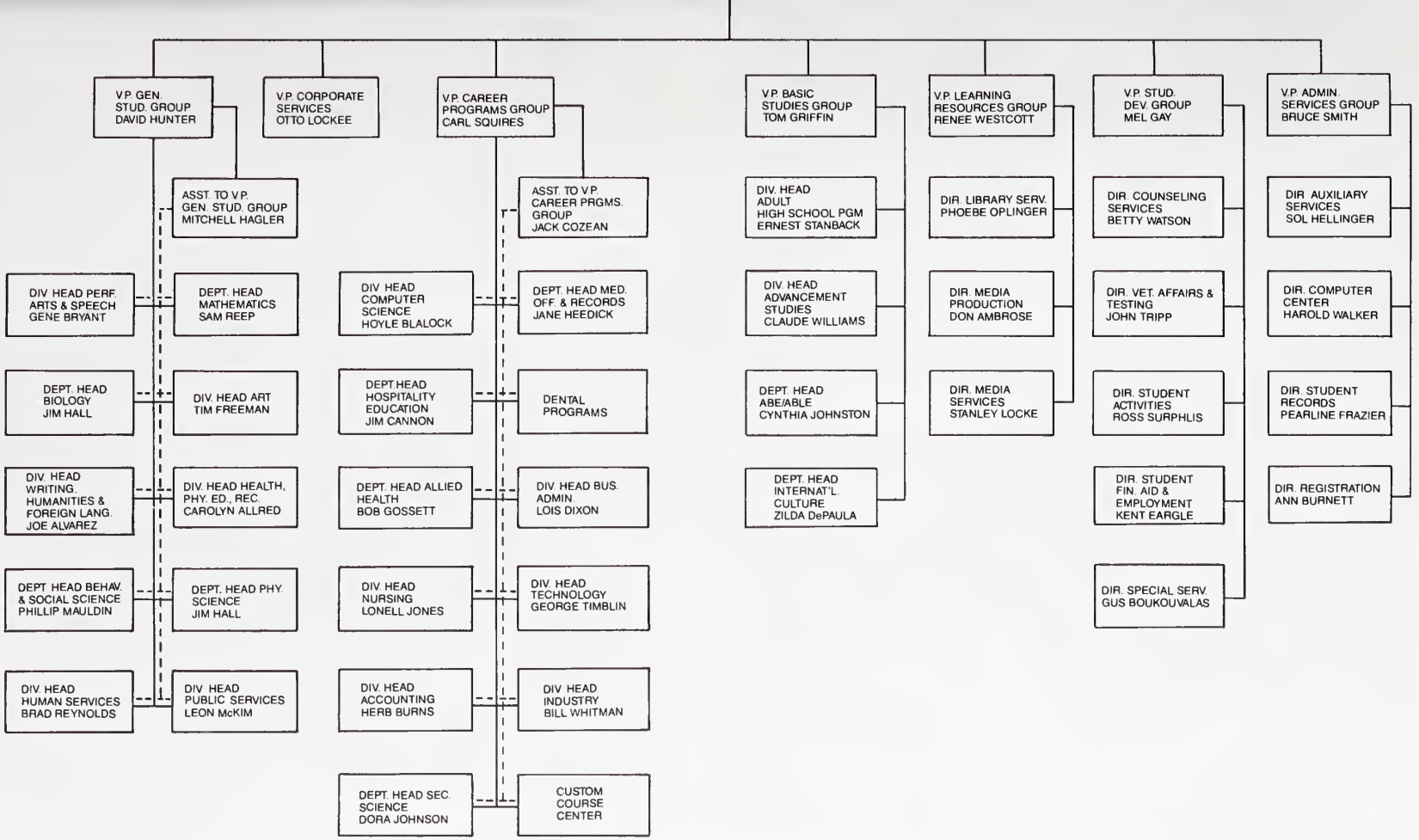
V.P. GEN. STUD. GROUP DAVID HUNTER
V.P. CORPORATE SERVICES OTTO LOCKEE
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DIR. LIBRARY SERV. PHOEBE OPLINGER
DIR. COUNSELING SERVICES BETTY WATSON
DIR. AUXILIARY SERVICES SOL HELLINGER
DIV. HEAD PERF. ARTS & SPEECH GENE BRYANT
DEPT. HEAD MATHEMATICS SAM REEP
DIV. HEAD COMPUTER SCIENCE HOYLE BLALOCK
DEPT. HEAD MED. OFF. & RECORDS JANE HEEDICK
DIV. HEAD ADVANCEMENT STUDIES CLAUDE WILLIAMS
DIR. MEDIA PRODUCTION DON AMBROSE
DIR. VET. AFFAIRS & TESTING JOHN TRIPP
DIR. COMPUTER CENTER HAROLD WALKER
DEPT. HEAD BIOLOGY JIM HALL
DIV. HEAD ART TIM FREEMAN
DEPT. HEAD HOSPITALITY EDUCATION JIM CANNON
DENTAL PROGRAMS
DEPT. HEAD ABE/ABLE CYNTHIA JOHNSTON
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DIV. HEAD WRITING, HUMANITIES & FOREIGN LANG. JOE ALVAREZ
DIV. HEAD HEALTH, PHY. ED., REC. CAROLYN ALLRED
DEPT. HEAD ALLIED HEALTH BOB GOSSETT
DIV. HEAD BUS. ADMIN. LOIS DIXON
DEPT. HEAD INTERNAT'L. CULTURE ZILDA DePAULA
DIR. STUDENT FIN. AID & EMPLOYMENT KENT EARGLE
DIR. REGISTRATION ANN BURNETT
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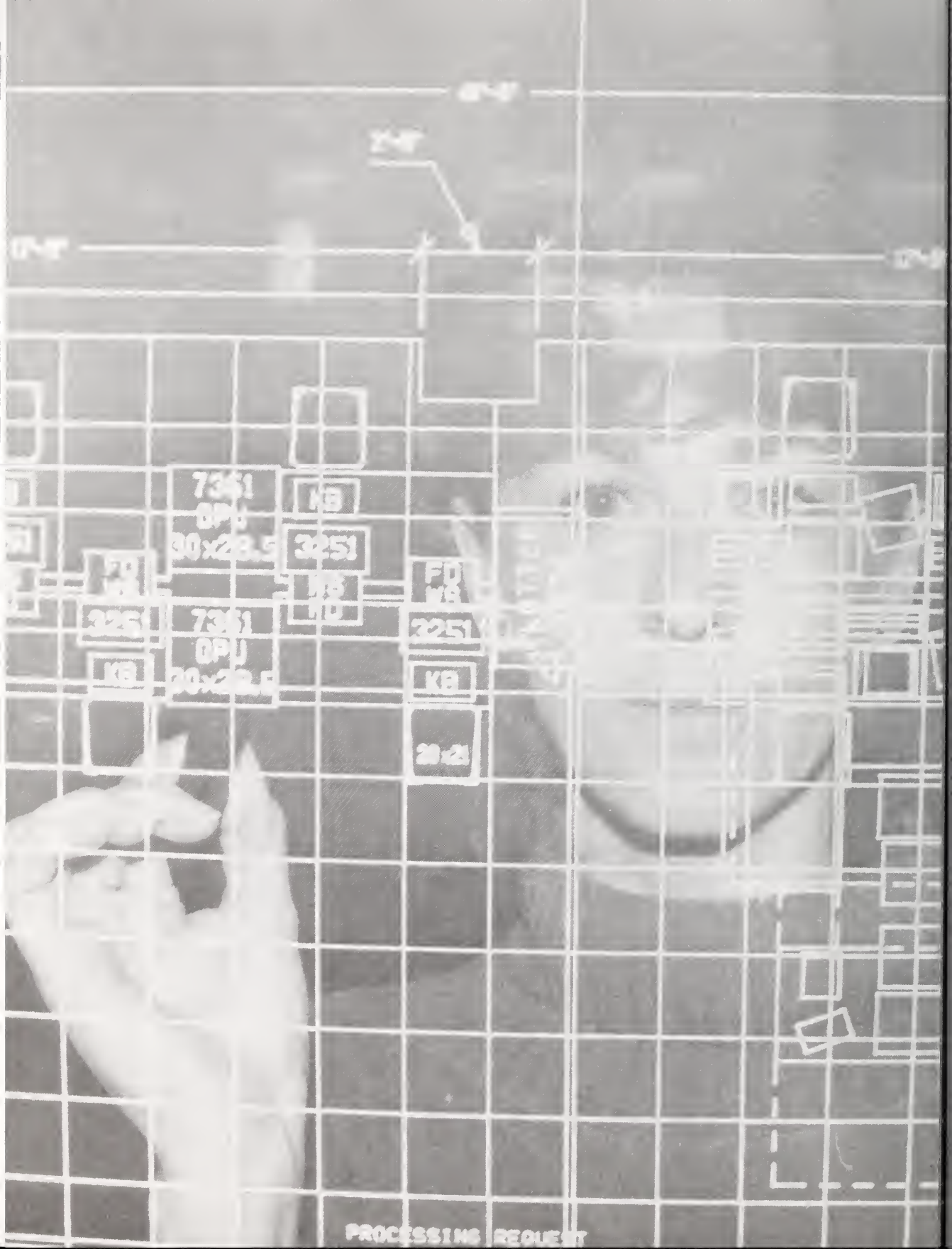
DIV. HEAD INDUSTRY BILL WHITMAN
DEPT. HEAD SEC. SCIENCE DORA JOHNSON
CUSTOM COURSE CENTER


PROCESSING REQUEST

CUSTOM
COURSE
CENTER

Here

Custom Course Center

The Custom Course Center produces non-credit, continuing education/extension courses designed to meet the unique needs of business, industry, and individuals.

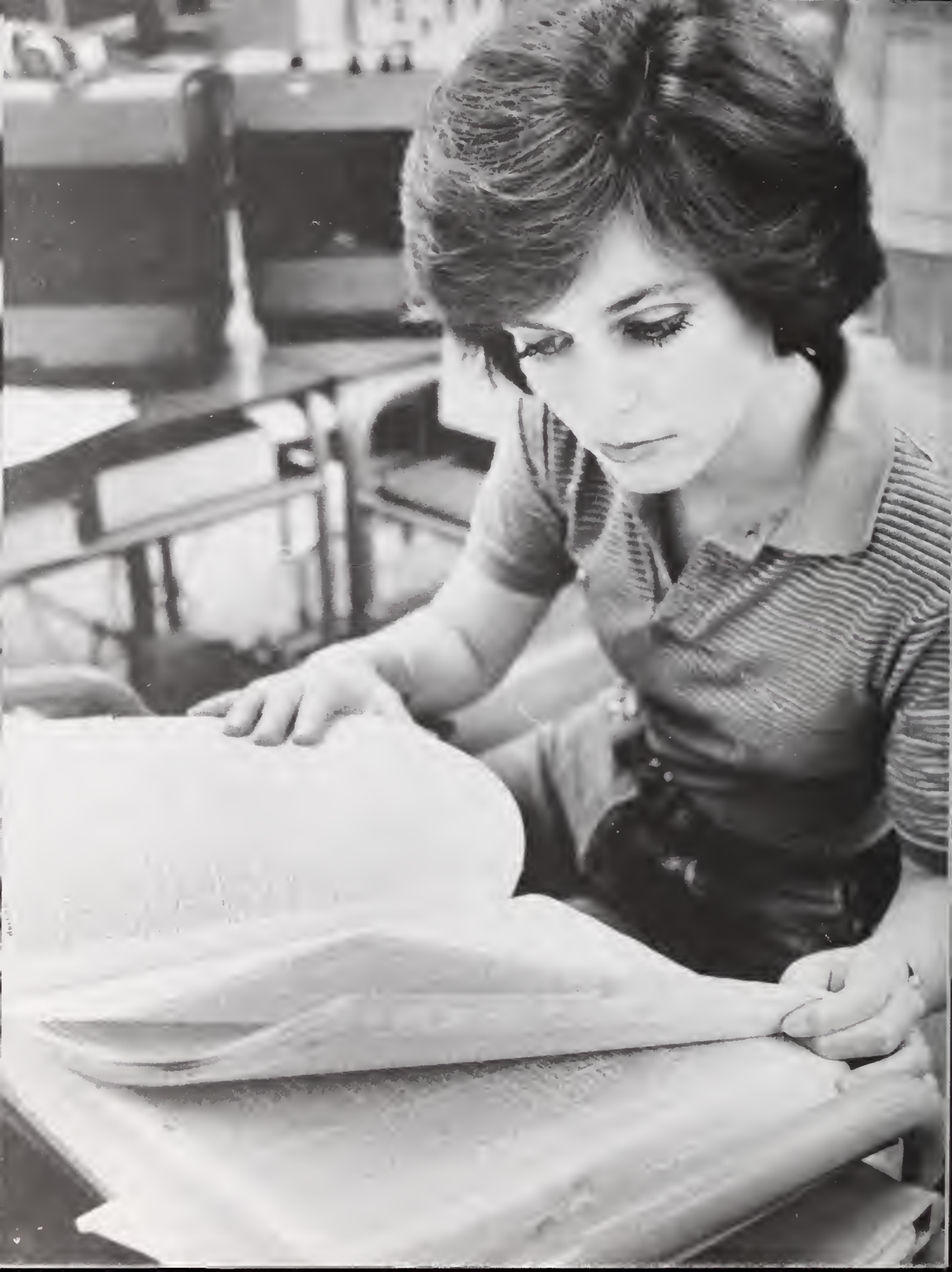
Custom courses go beyond the thousands of courses listed in this catalog. Courses can be designed for almost any subject area and can be offered either on-campus or at suitable off-campus locations.

The cost is reasonable, usually from $12-21 per person per course. This is possible because your N.C. tax dollars help fund special education.

Hundreds of these courses are already prepared and ready to be taught upon request. Or a brand new course can be customized to fit your specific needs. Whether a short-term seminar or a longer-term course is needed, the Custom Course Center personnel are available to get a class started quickly for you, your company, your business, or your association.

To discuss specific course needs, call the Custom Course Center, 342-6600.

TRANSFER PROGRAMS



Transfer Programs

Associate in Arts Degree (A.A.)
Associate in Fine Arts Degree (A.F.A.)

The College Transfer Programs offer courses comparable to freshman and sophomore courses taught at four-year colleges and universities. Many students begin college at CPCC, earn an A.A. or A.F.A. degree, and then transfer to a four-year college or university for their last two years.

Transfer requirements for four-year colleges or universities vary; therefore, course sequence should be planned by the student and program counselor with the specific four-year institution in mind. For reference, a catalog from the college or university of your choice would be helpful.

College transfer courses are numbered in the 1000s and 2000s. The second digit in this number tells the number of credit hours of the course. Course descriptions are listed toward the back of this catalog.

Note: Some of the Career Programs have a transfer agreement with senior institutions. Students should consult with a faculty adviser or program counselor regarding transferability.

Associate in Arts Degree—A.A. (C011)

The Associate in Arts Degree is awarded for liberal arts study. Students are eligible for the degree upon completion of 96 quarter hours, including the minimum in each of these areas:

Degree Requirements

Communication (required of all students) 9
(English Composition: COM 1304, 1305, 1306)
Behavioral and Social Science 12
Health and Physical Education 3
Humanities 14
required courses, see a counselor.
Biology or Physical Science or Mathematics 20
(Choose from at least two of these three fields. At least ten hours must be taken in Laboratory Science, either biological or physical.)
Electives (1000 and 2000 level courses) 38
Total Credit Hours 96

Note: For a suggested sequence of required courses, see a counselor.

Associate in Fine Arts Degree—A.F.A. (C011)

The Associate in Fine Arts Degree is awarded in art, dance, drama, and music. Students are eligible for the Associate in Fine Arts Degree upon completion of 96 quarter hours, including the minimum in each of these areas and the specific major requirements:

Degree Requirements

Communication (required of all students) 9
(English Composition: COM 1304, 1305, 1306)
Behavioral and Social Science 10
Health and Physical Education 3
Humanities 12
(Six hours must be taken outside the major area of concentration)
Biology or Physical Science or Mathematics 10
(Ten hours may be taken in biology or physical science or mathematics)
Electives (1000 and 2000 level courses) 52
Total credit hours 96

Major Area of Concentration in ART (C003)

Students pursuing the AFA Degree in ART are required to take:

History of Art I, II, III
Design I, II, III
Drawing I, II, III
Twelve hours in specific major area of concentration.
Electives to bring total hours to 96.

Major Area of Concentration in DRAMA (C006)

Students pursuing an AFA Degree in DRAMA are required to take:

Introduction to Theater
Stagecraft
Acting I, II
Introduction to Drama
Play Production
Make-Up Design
Dance for Musical Theater
Playwriting
Music Appreciation
Class Voice
Dance Electives
Directing
Scene Design I
Advanced Directing
Advanced Production
Electives to bring total hours to 96.

Major Area of Concentration in DANCE (C037)

Students pursuing the AFA Degree in DANCE are required to take:

Ballet I, II, III
Modern I, II, III
Dance Production
Dance Technique Electives
Dance History
Advanced Ballet I, II, III
Advanced Modern I, II, III
Choreography I, II, III
Music Appreciation I
Human Anatomy and Physiology
Music for Dancers I, II
Electives to bring total hours to 96.

Major Area of Concentration in MUSIC (C015)

Students pursuing an AFA Degree in MUSIC are required to take:

Class Piano I, II, III
Advanced Music Theory I, II, III
Advanced Applied Music (9 credits)
Music Theory I, II, III
Ensemble (6 credits)
Applied Music (9 credits)
History and Literature of Music I, II, III
Electives to bring total hours to 96.

Degree Requirements

Choose degree requirement courses from these lists for Associate in Arts and Associate in Fine Arts degrees.

Behavioral and Social Sciences

(12 hours for A.A.; 10 hours for A.F.A.)

ANT 1502 General Anthropology

ECO 2304 Economics I (Macro)
ECO 2305 Economics II (Micro)
ECO 2306 Economics III

GPY 1500 Introduction to World Geography

HIS 1340 Current Events
HIS 1500 World Civilization I
HIS 1501 World Civilization II
HIS 1502 American History I
HIS 1503 American History II
HIS 1510 American Civil War
HIS 1520 Black History I
HIS 1521 Black History II
HIS 2500 North Carolina History
HIS 2504 Special Topics in History

POL 1502 American Politics
POL 1510 Introduction to Comparative Politics
POL 1511 Introduction to International Relations
POL 2500 State and Urban Politics
POL 2501 Political Ideologies
POL 2504 Special Topics in Political Science

PSY 1500 Psychology of Adjustment
PSY 2500 Edcational Psychology
PSY 2504 General Psychology
PSY 2505 Human Development
PSY 2514 Abnormal Psychology
PSY 2524 Mental Retardation
PSY 2536 Special Problems in Psychology

SOC 1301 Group Interaction
SOC 1500 Sociology of the Family
SOC 2514 Introduction to Sociology
SOC 2515 Social Problems
SOC 2524 Special Problems of Sociology

Health and Physical Education

(3 hours for A.A. or A.F.A.)

HED 1111 Special Health Problems
HED 1201 Special Health Problems
HED 1203 CPR
HED 1204 Standard First Aid
HED 1205 Standard First Aid—Instructor
HED 1206 Advanced First Aid and Emergency Care
HED 1207 CPR Instructor
HED 1208 Personal Fitness Analysis
HED 1300 Introduction to Health Education
HED 1301 Special Health Problems
HED 1310 Your Health Your Choice
HED 2204 Prevention and Treatment of Injuries in Recreation
HED 2301 Human Sexuality in the Helping Skills

HPE 1100 Individual Activity
HPE 1103 Water Skiing
HPE 1104 Fencing, Beginning
HPE 1107 Self Defense and Physical Conditioning, Beginning
HPE 1108 Self Defense and Physical Conditioning, Intermediate
HPE 1109 Self Defense and Physical Conditioning, Advanced
HPE 1114 Snow Skiing, Beginning
HPE 1117 Ice Skating, Beginning
HPE 1123 Physical Fitness, Beginning
HPE 1124 Physical Fitness, Intermediate
HPE 1125 Physical Fitness, Advanced
HPE 1126 Social Dance, Beginning
HPE 1134 Basic Course of American Square Dancing
HPE 1138 Clogging, Beginning
HPE 1140 Self Protection for Women
HPE 1141 Jogging
HPE 1147 Tennis, Beginning
HPE 1154 Tap Dancing, Beginning
HPE 1157 Jazz Dance, Beginning
HPE 1164 Yoga, Beginning
HPE 1170 Aerobics
HPE 1174 Rock Climbing
HPE 1176 Backpacking
HPE 1178 Horseback Riding, Beginning
HPE 1180 Orienteering
HPE 1184 Swimming, Beginning
HPE 1185 Swimming, Advanced Beginner
HPE 1186 Swimming, Intermediate
HPE 1187 Swimming, "Swimmer"
HPE 1188 Swimming, Life Saving
HPE 1189 Water Safety Instructor
HPE 1190 Introduction to Golf I
HPE 1191 Introduction to Golf II
HPE 1193 Slimnastics, Beginning
HPE 1194 Slimnastics, Intermediate
HPE 1195 Slimnastics, Advanced
HPE 1196 Gymnastics, Beginning
HPE 1197 Gymnastics, Intermediate
HPE 1198 Bowling, Beginning
HPE 1215 Lifeguard Training
HPE 2100 Bicycling
HPE 2112 Canoeing, Basic
HPE 2113 Canoeing, Rivers
HPE 2114 Canoeing, Basic, Whitewater
HPE 2115 Introduction to Kayaking
HPE 2116 Whitewater Kayaking

Humanities

(14 hours for A.A.; 12 hours for A.F.A.)

ART 1300 Introduction to Art I
ART 1301 Introduction to Art II
ART 1310 History of Art I
ART 1311 History of Art II
ART 1312 History of Art III

DRA 1300 Introduction to Drama
DRA 1307 Theater Today
DRA 2414 Film Criticism

†FRE 2600 Intermediate French I
†FRE 2601 Intermediate French II

†GER 2600 Intermediate German I
†GER 2601 Intermediate German II

HUM 1300 Ascent of Man
HUM 1301 Writers, Revolutionaries, and Big Brother
HUM 1305 Classic Fairy Tales
HUM 1314 The Novel
HUM 1319 Mythology
HUM 1324 Science Fiction
HUM 1329 Russian Literature and Culture
HUM 1330 Women's Images in Fiction
HUM 1500 Humanities: Classical to Medieval
HUM 1501 Humanities: Renaissance to Present
HUM 2320 Special Topics

LIT 2314 Contemporary Fiction
LIT 2320 Special Topics
LIT 2324 The Bible as Literature
LIT 2504 British Literature, 1300-1800
LIT 2505 British Literature, 1800-Present
LIT 2514 American Literature, 1800-1900
LIT 2515 Modern American Literature

MUS 1314 Music Appreciation I
MUS 1315 Music Appreciation II
MUS 1316 Music Appreciation III
MUS 1404 Music Theory I
MUS 1405 Music Theory II
MUS 1406 Music Theory III
MUS 2404 History and Literature of Music I
MUS 2405 History and Literature of Music II
MUS 2406 History and Literature of Music III
MUS 2407 Advanced Music Theory i
MUS 2408 Advanced Music Theory II
MUS 2409 Advanced Music Theory III

PHI 1500 Introduction to Philosophy
PHI 2500 Logic

†SPA 2600 Intermediate Spanish I
†SPA 2601 Intermediate Spanish II

SPH 1301 Persuasive Speaking
SPH 2300 Voice and Diction
SPH 2304 Public Speaking

† May be used toward Humanities requirements if both courses are completed.

Laboratory Sciences

Choose "degree requirements" for AA or AFA from this list

Biological Sciences

BIO 1500 Biological Science
BIO 1501 General Botany
BIO 1502 General Zoology
BIO 1503 Microbiology
BIO 1504 Human Anatomy and Physiology I
BIO 1505 Human Anatomy and Physiology II
BIO 2500 Introduction to Entomology
BIO 2501 Ornithology
BIO 2504 Selected Topics in Biology
BIO 2514 Vertebrate Zoology

Physical Sciences

CHM 1500 Introductory Chemistry
CHM 1501 Chemistry for the Health Professions I
CHM 1502 Chemistry for the Health Professions II
CHM 1504 General Chemistry I
CHM 1505 General Chemistry II
CHM 1506 General Chemistry III
CHM 2124-2524 Special Problems
CHM 2604 Quantitative Chemical Analysis
CHM 2614 Organic Chemistry I
CHM 2615 Organic Chemistry II

GEL 1604 Physical Geology
GEL 2605 Historical Geology

GEO 1614 Introduction to Physical Geography

PHY 1400 Science and Society
PHY 1404 Physics I: Basic Mechanics
PHY 1405 Physics II: Elastic and Thermal Properties of Matter
PHY 1406 Physics III: Electricity and Magnetism
PHY 1407 Physics IV: Modern Physics
PHY 1500 Introduction to Astronomy
PHY 2504 General Physics I: Mechanics
PHY 2505 General Physics II: Molecular Physics and Waves
PHY 2506 General Physics III: Electricity and Magnetism
PHY 2507 General Physics IV: Optics and Modern Physics

Mathematics

Choose "degree requirements" for AA or AFA from this list

MAT 1500 Mathematics for Modern Living
MAT 1504 College Algebra I
MAT 1505 College Algebra II
MAT 1514 Precalculus Mathematics I
MAT 1515 Precalculus Mathematics II
MAT 1516 Introductory Calculus
MAT 1524 Analytic Geometry and Calculus I
MAT 2504 Analytic Geometry and Calculus II
MAT 2505 Analytic Geometry and Calculus III
MAT 2506 Analytic Geometry and Calculus IV
MAT 2508 Ordinary Differential Equations
MAT 2514 Statistics I
MAT 2515 Statistics II
MAT 2590 Individual Study

Complete List of Transfer Courses

Transfer requirements for four-year colleges/universities vary; therefore, course sequence should be planned by the student and program counselor with the specific four-year institution in mind. For reference, a catalog from the college/university of your choice would be helpful. Electives should be chosen from these courses.

Accounting

The accounting courses are designed to develop the student's understanding of fundamental and advanced principles of accounting; to develop the student's skill in operating machines needed on the job; and to familiarize the student with the manner in which many businesses depend upon accounting as a management tool.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
ACC	1604	Principles of Accounting I	5	2	6
ACC	1605	Principles of Accounting II	5	2	6
ACC	2616	Intermediate Accounting I	5	2	6
ACC	2627	Intermediate Accounting II	5	2	6

Art

The Art Division seeks to provide an environment including both instruction and experience which will enable its students to define the visual statements they wish to make and to equip them with the skills to make them. The broad range of courses offered seeks to provide for the wide variety of experience, interest, aptitude and purpose of students. Opportunity for growth in skills, knowledge and appreciation are offered for both the beginning and the experienced student.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
ART	1200	Fiber Dyes	0	4	2
ART	1202	Calligraphy	1	2	2
ART	1300	Introduction to Art I	3	0	3
ART	1301	Introduction to Art II	3	0	3
ART	1302	Art Education	2	2	3
ART	1303	Printmaking II	0	6	3
ART	1310	History of Art I	3	0	3
ART	1311	History of Art II	3	0	3
ART	1312	History of Art III	3	0	3
ART	1314	Basic Woodworking	0	6	3
ART	1315	Intermediate Woodworking	0	6	3
ART	1316	Advnced Woodworking	0	6	3
ART	1317	Furniture Restoration I	0	6	3
ART	1318	Furniture Restoration II	0	6	3
ART	1319	Furniture Restoration III	0	6	3
ART	1321	Printmaking I	0	6	3
ART	1322	Crafts	0	6	3
ART	1327	Sculpture I	0	6	3
ART	1328	Sculpture II	0	6	3
ART	1329	Sculpture III	0	6	3
ART	1332	Photographing Nature	2	2	3
ART	1333	Stained Glass	0	6	3
ART	1334	Painting I	0	6	3
ART	1335	Painting II	0	6	3
ART	1336	Painting III	0	6	3
ART	1344	Weaving I	0	6	3
ART	1345	Weaving II	0	6	3
ART	1346	Weaving III	0	6	3
ART	1347	Weaving IV	0	6	3
ART	1360	Raku	0	6	3
ART	1364	Ceramics I	0	6	3
ART	1365	Ceramics II	0	6	3
ART	1366	Ceramics III	0	6	3
ART	1374	Jewelry I	0	6	3
ART	1375	Jewelry II	0	6	3
ART	1376	Jewelry III	0	6	3
ART	1384	Basic Camera Techniques	3	0	3
ART	1385	Photo Lab Processes I	1	4	3
ART	1386	Photo Lab Processes II	1	4	3
ART	1389	Color Printing I	1	4	3
ART	1390	Color Printing II	1	4	3
ART	1392	Advanced Camera Techniques	0	3	3
ART	1393	Visual Aids	2	2	3
ART	1404	General Drawing I	2	4	4
ART	1405	General Drawing II	2	4	4
ART	1406	General Drawing III	2	4	4
ART	1424	Design I	2	4	4
ART	1425	Design II	2	4	4
ART	1426	Design III	2	4	4
ART	2300	Advanced Stained Glass	0	6	3
ART	2304	Independent Studio	0	6	3
ART	2322	Surface Design for Textiles	0	6	3

Behavioral and Social Sciences

The courses offered in this department are designed to enable students to understand the social, cultural, psychological, political and historical development of society. Emphasis is placed upon how to apply social science principles to modern life.

Anthropology

ANT	1502	General Anthropology	5	0	5

Education

EDU	2500	Introduction to Education	5	0	5

Geography

GPY	1500	Intro. to World Geography	5	0	5

History

HIS	1340	Current Events	3	0	3
HIS	1500	World Civilization I	5	0	5
HIS	1501	World Civilization II	5	0	5
HIS	1502	American History I	5	0	5
HIS	1503	American History II	5	0	5
HIS	1510	American Civil War	5	0	5
HIS	1520	Black History I	5	0	5
HIS	1521	Black History II	5	0	5
HIS	2500	North Carolina History	5	0	5
HIS	2504	Special Topics in History	5	0	5

Political Science

POL	1502	American Politics	5	0	5
POL	1510	Introd. to Comparative Politics	5	0	5
POL	1511	Introd. to International Relations	5	0	5

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
POL	2104-2504	Special Topics in Political Science	1 to 5		
POL	2500	State and Local Politics	5	0	5
POL	2501	Political Ideologies	5	0	5

Psychology

PSY	1500	Psychology of Adjustment	5	0	5
PSY	2500	Educational Psychology	5	0	5
PSY	2504	General Psychology	5	0	5
PSY	2505	Human Development	5	0	5
PSY	2514	Abnormal Psychology	5	0	5
PSY	2524	Mental Retardation	5	0	5
PSY	2536	Special Problems in Psychology	5	0	5

Sociology

SOC	1301	Group Interaction	5	0	5
SOC	1500	Sociology of the Family	5	0	5
SOC	2514	Introduction to Sociology	5	0	5
SOC	2515	Social Problems	5	0	5
SOC	2524	Special Problems of Sociology	5	0	5

Biology

The Biology curriculum is designed to prepare students for professional careers in the life sciences and related areas; to teach students to apply the scientific method, to think logically and systematically, to have an open-minded attitude in interpreting data and to be thorough in considering all aspects of a problem; to impart knowledge of the fauna and flora of this region for aesthetic as well as functional purposes; to understand the role of the life sciences in mastering environments; to help students recognize themselves as highly complex members of the living world for which they are responsible; to help students become more knowledgeable citizens, parents and leaders.

BIO	1500	Biological Science	3	4	5
BIO	1501	General Botany	3	4	5
BIO	1502	General Zoology	3	4	5
BIO	1503	Microbiology	3	4	5
BIO	1504	Human Anatomy and Physiology I	3	4	5
BIO	1505	Human Anatomy and Physiology II	3	4	5
BIO	2300	Genetics	3	0	3
BIO	2304	Human Nutrition	3	0	3
BIO	2305	Dental Nutrition	3	0	3
BIO	2500	Introduction to Entomology	3	4	5
BIO	2501	Ornithology	3	4	5
BIO	2504	Selected Topics in Biology	3	4	5
BIO	2514	Vertebrate Zoology	3	4	5

Business Administration

The Business Administration courses which are transferable to four-year colleges and universities should provide students with the necessary background in business law, economics and management to enroll in junior and senior level business courses at the receiving college.

BUS	1400	Introduction to Business	3	2	4
BUS	2304	Business Law I	3	0	3
BUS	2305	Business Law II	3	0	3
BUS	2306	Business Law III	3	0	3
ECO	2304	Economics I (Macro)	3	0	3
ECO	2305	Economics II (Micro)	3	0	3
ECO	2306	Economics III	3	0	3
MGT	2314	Principles of Management	3	0	3
MKT	1304	Marketing I	3	0	3
MKT	1305	Marketing II	3	0	3

Computer Science

The Computer Science Department offers courses for college transfer students to meet Computer Science requirements and/or to use as electives. Students should see an adviser or counselor in their major area or a member of the Computer Science faculty to determine the appropriate sequence to meet their objectives.

EDP	1404	Computer Concepts and FORTRAN Programming I	3	2	4
EDP	1405	FORTRAN Programming II	3	2	4
EDP	1407	Computer Concepts and PASCAL Programming I	3	2	4
EDP	1408	Advanced PASCAL	3	2	4
EDP	1500	Computer Literacy	5	0	5
EDP	2306	Computer Programming I (Business)	2	2	3
EDP	2307	Computer Programming II (Business)	2	2	3

General Studies

General Studies [GEN] courses provide students with specific study of general interest. These courses carry college credit. Only ten hours of GEN courses may be applied toward the Associate in Arts or Associate in Fine Arts Degrees. GEN courses originate in or are taught through various College departments.

GEN	1140	Field Biology	0	22	1
GEN	1141	Intro. to Nature Photography	0	22	1
GEN	1142	Field Biology/Ecology of North Carolina	0	22	1
GEN	1143	Edible Wild Plants	5	22	1
GEN	1144	Ecology by Canoe	0	22	1
GEN	1148	Field Identification of Insects	0	22	1
GEN	1149	Field Ornithology	0	22	1
GEN	1512	Divorce	5	0	5

Health and Physical Education

The Health and Physical Education curriculum is designed to lead to healthful living and to provide experience in physical activities which will lead to acquisition of skill and fitness with leisure-time or recreational value. Only six hours of health and physical education courses may be applied toward the A.A. or A.F.A. degrees.

Health

HED	1111	Special Health Problems	1	0	1
HED	1201	Special Health Problems	2	0	2
HED	1203	Cardiopulmonary Resuscitation (CPR)	2	0	2
HED	1204	Standard First Aid	1	2	2
HED	1205	Standard First Aid—Instructor	1	2	2
HED	1206	Advanced First Aid and Emergency Care	1	2	2
HED	1207	CPR Instructor	2	0	2
HED	1208	Personal Fitness Analysis	1	2	2

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
HED	1300	Intro. to Health Education	3	0	3
HED	1301	Special Health Problems	3	0	3
HED	1310	Your Health—Your Choice	2	2	3
HED	2204	Prevention and Treatment of Injuries in Recreation	1	2	2
HED	2301	Human Sexuality in the Helping Skills	3	0	3

Physical Education Skills

HPE	1100	Individual Activity	0	3	1
HPE	1103	Water Skiing	0	3	1
HPE	1104	Fencing, Beginning	0	3	1
HPE	1105	Fencing, Intermediate	0	3	1
HPE	1106	Fencing, Advanced	0	3	1
HPE	1107	Self Defense and Physical Conditioning, Beginning	0	3	1
HPE	1108	Self Defense and Physical Conditioning, Intermediate	0	3	1
HPE	1109	Self Defense and Physical Conditioning, Advanced	0	3	1
HPE	1114	Snow Skiing, Beginning	0	3	1
HPE	1117	Ice Skating, Beginning	0	3	1
HPE	1123	Physical Fitness, Beginning	0	3	1
HPE	1124	Physical Fitness, Intermediate	0	3	1
HPE	1125	Physical Fitness, Advanced	0	3	1
HPE	1126	Social Dance, Beginning	0	3	1
HPE	1127	Social Dance, Advanced Beginner	0	3	1
HPE	1134	Basic Course of American Square Dance	0	3	1
HPE	1138	Clogging, Beginning	0	3	1
HPE	1139	Clogging, Intermediate	0	3	1
HPE	1140	Self Protection for Women	0	3	1
HPE	1141	Jogging	0	3	1
HPE	1147	Tennis, Beginning	0	3	1
HPE	1148	Tennis, Intermediate	0	3	1
HPE	1149	Tennis, Advanced	0	3	1
HPE	1150	Exercise for the Handicapped	0	3	1
HPE	1154	Tap Dancing, Beginning	0	3	1
HPE	1157	Jazz Dance, Beginning	0	3	1
HPE	1164	Yoga, Beginning	0	3	1
HPE	1165	Yoga, Intermediate	0	3	1
HPE	1166	Yoga, Advanced	0	3	1
HPE	1170	Aerobics	0	3	1
HPE	1174	Rock Climbing	0	3	1
HPE	1175	Techniques of Lead Climbing	0	3	1
HPE	1176	Introduction to Backpacking	0	3	1
HPE	1177	Wilderness Skills	0	3	1
HPE	1178	Horseback Riding, Beginning	0	3	1
HPE	1180	Orienteering	0	3	1
HPE	1184	Swimming, Beginner	0	3	1
HPE	1185	Swimming, Advanced Beginner	0	3	1
HPE	1186	Swimming, Intermediate	0	3	1
HPE	1187	Swimming, "Swimmer"	0	3	1
HPE	1188	Swimming, Life Saving	0	3	1
HPE	1189	Water Safety Instructor	0	3	1
HPE	1190	Introduction to Golf I	0	3	1
HPE	1191	Introduction to Golf II	0	3	1
HPE	1193	Slimnastics, Beginning	0	3	1
HPE	1194	Slimnastics, Intermediate	0	3	1
HPE	1195	Slimnastics, Advanced	0	3	1
HPE	1196	Gymnastics, Beginning	0	3	1
HPE	1197	Gymnastics, Intermediate	0	3	1
HPE	1198	Bowling, Beginning	0	3	1
HPE	1200	Creative Arts in Recreation	1	3	2
HPE	1214	Water Activities	1	3	2
HPE	1215	Lifeguard Training	1	3	2
HPE	1404	Introd. to Reecreation Services	3	3	4
HPE	1504	Relays, Games & Team Sports	3	6	5
HPE	2100	Bicycling	0	3	1
HPE	2112	Canoeing, Basic	0	3	1
HPE	2113	Canoeing, Rivers	0	3	1
HPE	2114	Canoeing, Basic White Water	0	3	1
HPE	2115	Introduction to Kayaking	0	3	1
HPE	2116	Whitewater Kayaking	0	3	1
HPE	2200	Sports Officiating	1	3	2
HPE	2314	Lifetime Activities	2	3	3
HPE	2315	Recreational Scheduling	2	3	3
HPE	2325	Intro. to Outdoor Recreation	2	3	3
HPE	2424	Program Planning and Organization	3	3	4
HPE	2434	Recreation and Special Populations	3	3	4
HPE	2445	Principles of Physical Fitness	3	3	4

Mathematics

Mathematics courses are designed to prepare students for professional careers in mathematics and related areas, to develop student knowledge and understanding of the fundamental principles and concepts of mathematics, and to develop manipulative skills and the ability to apply mathematics to physical situations.

Choose "degree requirements" for A.A. A.F.A. from this list.

MAT	1500	Mathematics for Modern Living	5	0	5
MAT	1504	College Algebra I	5	0	5
MAT	1505	College Algebra II	5	0	5
MAT	1514	Precalculus Mathematics I	5	0	5
MAT	1515	Precalculus Mathematics II	5	0	5
MAT	1516	Introductory Calculus	5	0	5
MAT	1524	Analytic Geometry and Calc. I	5	0	5
MAT	2504	Analytic Geometry and Calc. II	5	0	5
MAT	2505	Analytic Geometry and Calc. III	5	0	5
MAT	2506	Analytic Geometry and Calc. IV	5	0	5
MAT	2508	Ordinary Differential Equations	5	0	5
MAT	2514	Statistics I	5	0	5
MAT	2515	Statistics II	5	0	5
MAT	2590	Individual Study	5	0	5

Performing Arts

Dance

The Dance courses emphasize strong technique classes and performing opportunities. Both modern and ballet are offered at all levels of accomplishment. Adult beginners may learn with people their own age, and the more accomplished can maintain their rate of growth and perfection. Dance Source courses bring national and ethnic techniques forward, and choreography classes explore movement and develop structuring skills. Production classes feature performances each quarter, and it is here in the final product that a creative and skilled dancer can find rewards.

DAN	1184	Modern Dance I	0	3	1
DAN	1185	Modern Dance II	0	3	1

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
DAN	1186	Modern Dance III	0	3	1
DAN	1194	Ballet I	0	3	1
DAN	1195	Ballet II	0	3	1
DAN	1196	Ballet III	0	3	1
DAN	1197	Ballet Pointe Work	0	3	1
DAN	1280	Dance for Musical Theatre	0	4	2
DAN	1190	Dance Sources	1	2	2
DAN	2184	Advanced Modern Dance I	0	3	1
DAN	2185	Advanced Modern Dance II	0	3	1
DAN	2186	Advanced Modern Dance III	0	3	1
DAN	2194	Advanced Ballet I	0	3	1
DAN	2195	Advanced Ballet II	0	3	1
DAN	2196	Advanced Ballet III	0	3	1
DAN	2284	Choreography I	0	4	2
DAN	2285	Choreography II	0	4	2
DAN	2286	Choreography III	0	4	2
DAN	2384	Dance Seminar	2	2	3
DAN	2388	Dance Production I	0	12	3

Drama

Drama courses permit students to learn theater practice and theories by involving them in regular College theater productions. They have the opportunity to learn basic backstage procedures in addition to acting in plays. Basic theater courses in play production, stagecraft, theater history, acting, directing, and scene design are open to all students. The College theater productions are correlated with course activities whenever possible.

DRA	1300	Introduction to Drama	3	0	3
DRA	1301	Stagecraft	1	4	3
DRA	1302	Scene Design	1	4	3
DRA	1303	Acting	1	4	3
DRA	1304	Advanced Acting	1	4	3
DRA	1307	Theatre Today	3	0	3
DRA	1310	Play Production: One Acts	0	12	3
DRA	1311	Play Production: Comedy/ Drama	0	12	3
DRA	1312	Play Production: Musical	0	12	3
DRA	2204	Special Problems in Drama	1	3	2
DRA	2303	Acting for the Camera	1	4	3
DRA	2311	Advanced Play Production: Comedy/Drama	0	12	3
DRA	2312	Advanced Play Production: Musical	0	12	3
DRA	2414	Film Criticism	3	2	4

Music, Applied

Students may accumulate a total of nine quarter hours in any 1000 level applied music course which may be counted toward an A.F.A. Degree. Students may also accumulate a total of nine quarter hours in any 2000 level applied music course which may be counted toward an A.F.A. Degree. Any of these courses may be taken for cumulative credit for a maximum of nine quarter hours.

Applied Music: Upon completion of each course, students should have made significant improvement in technique and have mastered selected literature for the instrument. Audition is required before registering.

Applied Music	Non-Transferable Credit	1 Credit	2 Credits	3 Credits
Piano	MUA 9100	MUA 1100	MUA 1200	MUA 1300
Organ	MUA 9101	MUA 1101	MUA 1201	MUA 1301
Voice	MUA 9102	MUA 1102	MUA 1202	MUA 1302
Harpsichord	MUA 9103	MUA 1103	MUA 1203	MUA 1303
Harp	MUA 9104	MUA 1104	MUA 1204	MUA 1304
Violin	MUA 9105	MUA 1105	MUA 1205	MUA 1305
Guitar	MUA 9106	MUA 1106	MUA 1206	MUA 1306
Percussion	MUA 9107	MUA 1107	MUA 1207	MUA 1307
Flute	MUA 9108	MUA 1108	MUA 1208	MUA 1308
Trumpet	MUA 9109	MUA 1109	MUA 1209	MUA 1309
Trombone	MUA 9110	MUA 1110	MUA 1210	MUA 1310
String Bass	MUA 9111	MUA 1111	MUA 1211	MUA 1311
Clarinet	MUA 9112	MUA 1112	MUA 1212	MUA 1312

Advanced Applied Music: Upon completion of each course, students should have made further improvements in technical and musical skills and have mastered a more advanced level of literature for the instrument. Audition is required before registering.

Advanced Applied Music	1 Credit	2 Credits	3 Credits
Piano	MUA 2100	MUA 2200	MUA 2300
Organ	MUA 2101	MUA 2201	MUA 2301
Voice	MUA 2102	MUA 2202	MUA 2302
Harpsichord	MUA 2103	MUA 2203	MUA 2303
Harp	MUA 2104	MUA 2204	MUA 2304
Violin	MUA 2105	MUA 2205	MUA 2305
Guitar	MUA 2106	MUA 2206	MUA 2306
Percussion	MUA 2107	MUA 2207	MUA 2307
Flute	MUA 2108	MUA 2208	MUA 2308
Trumpet	MUA 2109	MUA 2209	MUA 2309
Trombone	MUA 2110	MUA 2210	MUA 2310
String Bass	MUA 2111	MUA 2211	MUA 2311
Clarinet	MUA 2112	MUA 2212	MUA 2312

Music

The Music courses are designed to provide opportunities for the greatest number of students to share in the heritage of musical culture and skills. Emphasis is placed on creative participation in performance and upon music as a medium of communication. Music is also studied as a reflection of the cultures that created it—whether present or past. *Only six hours of ensemble may be used toward the A.A. Degree.*

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
MUS	1100	Vocal Ensemble	0	3	1
MUS	1104	Class Voice I	0	2	1
MUS	1105	Class Voice II	0	2	1
MUS	1107	Chamber Choir	0	3	1
MUS	1112	Class Strings	0	3	1
MUS	1117	Wind Ensemble	0	3	1
MUS	1122	Fiddle—Blue Grass & Old-Time	0	3	1
MUS	1127	Orchestra	0	3	1
MUS	1128	Concert Band	0	3	1
MUS	1132	Introduction to Sight Singing and Ear Training	0	2	1
MUS	1133	Banjo—Old-Time Music	0	3	1
MUS	1136	Clawhammer Banjo II	0	3	1
MUS	1139	Old-Time Music "Jam"	0	3	1
MUS	1154	Class Piano I	0	3	1
MUS	1155	Class Piano II	0	3	1
MUS	1156	Class Piano III	0	3	1
MUS	1157	Intermediate Piano I	0	3	1
MUS	1158	Intermediate Piano II	0	3	1

MUS	1160	Classical and Flamenco Guitar	0	3	1
MUS	1164	Guitar	0	3	1
MUS	1165	Intermediate Guitar	0	3	1
MUS	1166	Folk Music Guitar I	0	3	1
MUS	1167	Folk Music Guitar II	0	3	1
MUS	1171	Chords I	0	2	1
MUS	1172	Chords II	0	2	1
MUS	1188	Hammered Dulcimer	0	3	1
MUS	1189	Autoharp	0	3	1
MUS	1304	Children's Music I	3	0	3
MUS	1305	Children's Music II	3	0	3
MUS	1310	Introduction to Music Theory	3	0	3
MUS	1314	Music Appreciation I	3	0	3
MUS	1315	Music Appreciation II	3	0	3
MUS	1316	Music Appreciation III	3	0	3
MUS	1320	Music for Dancers I	3	0	3
MUS	1321	Music for Dancers II	3	0	3
MUS	1324	Recording Studio Technique I	3	0	3
MUS	1325	Recording Studio Technique II	0	6	3
MUS	1326	Recording Studio Technique III	0	6	3
MUS	1334	Music Manuscript Autography and Preparation	2	2	3
MUS	1335	Music Manuscript II	2	2	3
MUS	1404	Music Theory I	3	2	4
MUS	1405	Music Theory II	3	2	4
MUS	1406	Music Theory III	3	2	4
MUS	2000	Seminar in Music		TBA	1
MUS	2100	Seminar in Music		TBA	1
MUS	2154	Advanced Class Piano I	0	3	1
MUS	2155	Advanced Class Piano II	0	3	1
MUS	2156	Advanced Class Piano III	0	3	1
MUS	2158	Piano Ensemble	0	3	1
MUS	2169	Jazz Guitar	0	3	1
MUS	2200	Seminar in Music		TBA	2
MUS	2201	Business of Music	2	0	2
MUS	2202	Songwriting	2	0	2
MUS	2204	Special Problems in Music	1	3	2
MUS	2257	Jazz Piano I	1	3	2
MUS	2258	Jazz Piano II	1	3	2
MUS	2300	Seminar in Music		TBA	3
MUS	2338	Opera Workshop	0	6	3
MUS	2404	History & Literature of Music I	3	2	4
MUS	2405	History & Literature of Music II	3	2	4
MUS	2406	History & Lit. of Music III	3	2	4
MUS	2407	Advanced Music Theory I	3	2	4
MUS	2408	Advanced Music Theory II	3	2	4
MUS	2409	Advanced Music Theory III	3	2	4

Speech

Courses in Speech are designed to help students develop their skills in making both formal and informal presentations before an audience, in serving on panels, and in participating in group discussions.

SPH	1300	Oral Communication	3	0	3
SPH	1301	Persuasive Speaking	3	0	3
SPH	2101	Parliamentary Procedure	1	0	1
SPH	2300	Voice and Diction	3	0	3
SPH	2304	Public Speaking	3	0	3

Physical Science

Physical Science courses are designed to teach students to apply the scientific method, to think logically and systematically, to have an open-minded attitude in interpreting data, to be thorough in considering all aspects of a problem; to prepare people to live in a complex society; to impart knowledge of scientific facts; and to promote an understanding of the contributions that physical science has made and is making to the ability to master the environment.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
		Chemistry			
CHM	1500	Introduction to Chemistry	3	4	5
CHM	1501	Chemistry for Health Professions I	3	4	5
CHM	1502	Chemistry for Health Professions II	3	4	5
CHM	1504	General Chemistry I	3	4	5
CHM	1505	General Chemistry II	3	4	5
CHM	1506	General Chemistry III	3	4	5
CHM	2124-2524	Special Problems		TBA	
CHM	2414	Introd. Organic Chemistry	4	0	4
CHM	2455	Textile Coloring and Testing	2	4	4
CHM	2604	Quantitative Chemical Analysis	3	6	6
CHM	2614	Organic Chemistry I	4	4	6
CHM	2615	Organic Chemistry II	4	4	6
CHM	2625	Chromatography	3	6	6
CHM	2626	Optical Methods Chemical Analysis	3	6	6
		Geology			
GEL	1604	Physical Geology	5	2	6
GEL	2605	Historical Geology	5	2	6
		Geography			
GEO	1614	Introd. to Physical Geography	5	2	6
		Physics			
PHY	1300	Science and Society	3	0	3
PHY	1400	Science and Society	3	2	4
PHY	1404	Physics I: Basic Mechanics	3	2	4
PHY	1405	Physics II: Elastic and Thermal Property of Matter	3	2	4
PHY	1406	Physics III: Electricity and Magnetism	3	2	4
PHY	1407	Physics IV: Modern Physics	3	2	4
PHY	1500	Introduction to Astronomy	4	2	5
PHY	2504	General Physics I: Mechanics	4	2	5
PHY	2505	General Physics II: Molecular Physics and Waves	4	2	5
PHY	2506	General Physics III: Electricity and Magnetism	4	2	5
PHY	2507	General Physics IV: Optics and Modern Physics	4	2	5

Writing, Humanities and Foreign Languages

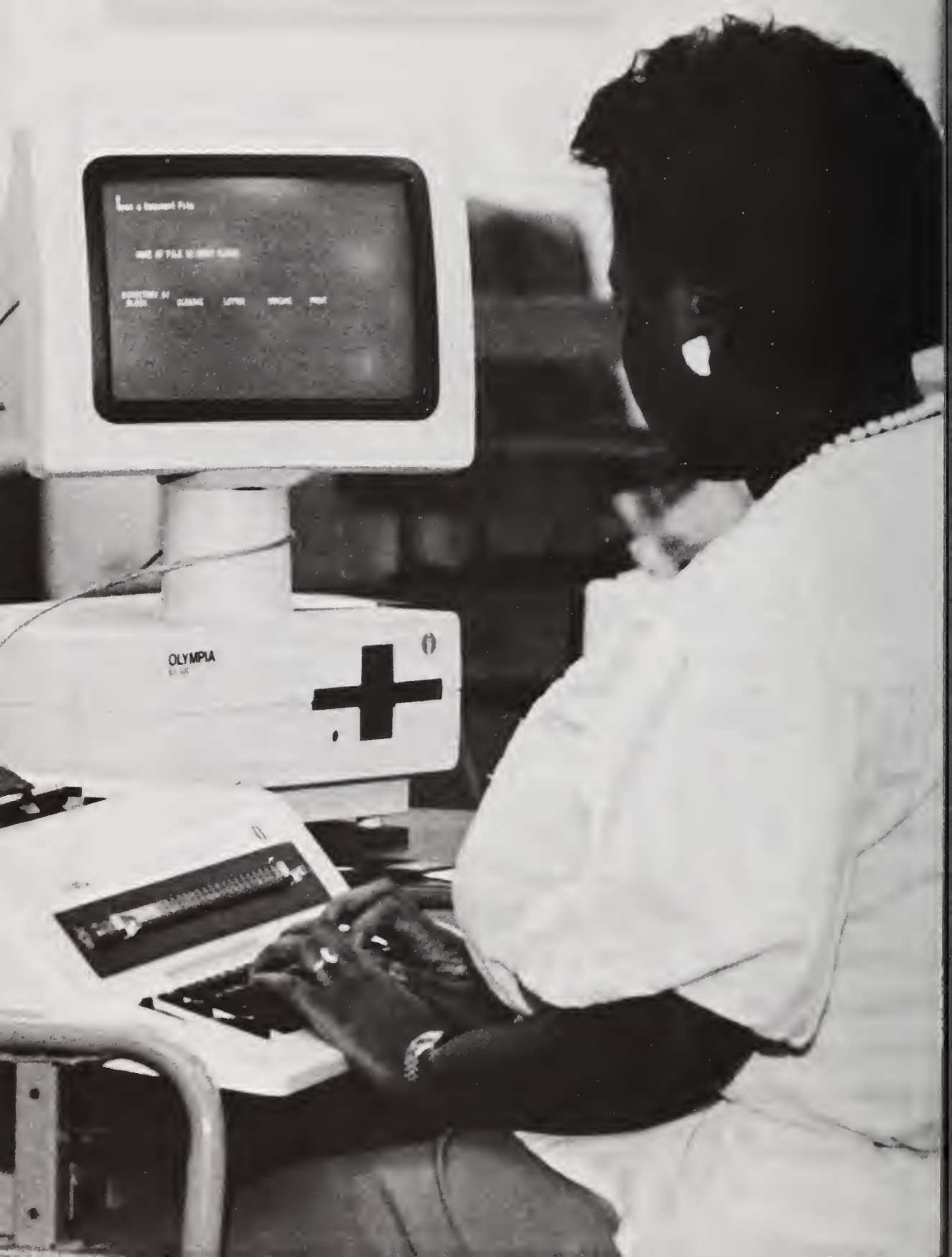
Communications courses help students improve their writing and thinking skills. Students read to develop ideas and techniques of expression. They engage in discussion to find a logical relationship between idea and expression. They write and participate in class discussions to develop their own skills in clear, accurate and effective use of language.

Humanities, literature and philosophy courses offer students opportunities—through reading, researching and discussing—to explore a wide range of ideas and values, to recognize their own needs as human beings, and ultimately to gain some

perspective for making choices as individuals and members of society. (All courses with HUM, LIT, PHI, and some ART, DRA, SPH, and MUS prefixes count toward the humanities requirement.)

Foreign language courses give students an opportunity to develop proficiency in French, Spanish, Italian, Russian and German. FRE 2600 and FRE 2601, or SPA 2600 and SPA 2601, or GER 2600 and GER 2601 will satisfy the humanities requirements if both courses in a foreign language are completed.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
Communications					
COM	1304	Intro. to Communications	3	0	3
COM	1305	English Composition I	3	0	3
COM	1306	English Composition II	3	0	3
COM	1324	Creative Writing	3	0	3
COM	1325	Advanced Creative Writing	3	0	3
COM	2390	Individual Study	3	0	3
Humanities					
HUM	1300	The Ascent of Man	3	0	3
HUM	1301	Writers, Revolutionaries, and Big Brother	3	0	3
HUM	1305	Classic Fairy Tales	3	0	3
HUM	1314	The Novel	3	0	3
HUM	1319	Mythology	3	0	3
HUM	1324	Science Fiction	3	0	3
HUM	1329	Russian Literature and Culture	3	0	3
HUM	1330	Women's Images in Fiction	3	0	3
HUM	1500	Humanities: Classical to Medieval	5	0	5
HUM	1501	Humanities: Renaissance to Present	5	0	5
HUM	2320	Special Topics	3	0	3
Journalism					
JOU	1300	News Writing	2	3	3
Literature					
LIT	2314	Contemporary Fiction	3	0	3
LIT	2320	Special Topics	3	0	3
LIT	2324	The Bible as Literature	3	0	3
LIT	2504	British Literature: 1300-1800	5	0	5
LIT	2505	British Literature: 1800-Present	5	0	5
LIT	2514	American Literature: 1800-1900	5	0	5
LIT	2515	Modern American Literature	5	0	5
Philosophy					
PHI	1500	Introduction to Philosophy	5	0	5
PHI	2500	Logic	5	0	5
French					
FRE	1300	Travel French	3	0	3
FRE	1600	Elementary French I	5	2	6
FRE	1601	Elementary French II	5	2	6
FRE	2320	Special Topics	3	0	3
FRE	2600	Intermediate French I	5	2	6
FRE	2601	Intermediate French II	5	2	6
German					
GER	1600	Elementary German I	5	2	6
GER	1601	Elementary German II	5	2	6
GER	2600	Intermediate German I	5	2	6
GER	2601	Intermediate German II	5	2	6
Italian					
ITA	1600	Elementary Italian I	5	2	6
ITA	1601	Elementary Italian II	5	2	6
ITA	2600	Intermediate Italian I	5	2	6
Russian					
RUS	1600	Elementary Russian I	5	2	6
RUS	1601	Elementary Russian II	5	2	6
Spanish					
SPA	1300	Survival Spanish I	3	0	3
SPA	1314	Survival Spanish II	3	0	3
SPA	1600	Elementary Spanish I	5	2	6
SPA	1601	Elementary Spaniah II	5	2	6
SPA	2320	Special Topics	3	0	3
SPA	2600	Intermediate Spanish I	5	2	6
SPA	2601	Intermediate Spanish II	5	2	6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CAREER PROGRAMS

Career Programs

Program titles are listed alphabetically. The letter/numbers following, such as T062, are codes you will need to list on the registration form.

The required courses for each program are listed. Abbreviations are: HRS CLS/WK = hours of class per week; HRS LAB/WK = hours of lab per week; HRS CLC/WK = hours of clinic per week or HRS COOP/WK = hours of co-op work per week; and HRS CR/QTR = hours of credit per quarter.

* * * * *

CPCC offers over 60 career programs. Some are designed to prepare students as technicians for entry into occupational fields. Others are designed to train individuals for jobs in occupations leading to the skilled craftsman level.

Technical Programs

These programs train individuals for jobs in such fields as Commercial Art, Engineering Technology (Civil, Computer, Electronics, Manufacturing, Mechanical), Dental Hygiene, and Business Administration. The Associate Degree in Applied Science is awarded by the College upon completion of these programs, which require at least six quarters of full-time study. With experience, many individuals are able to move into professional and managerial positions.

Vocational Programs

These programs train individuals for occupations leading to skilled or craftsman levels, such as Machinist, Welder, Computer Operator, Auto Mechanic, etc. Certificates (for full-time study of less than one year) and Diplomas (for full-time study of one year) are awarded by the College upon completion. In some cases, courses taken for a Certificate or Diploma may be applied toward a Degree.

* * * * *

For a description of each course, turn to the course descriptions section toward the back of this catalog.

Accounting (TO16)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The purpose of the Accounting curriculum is to prepare the individual to enter the accounting profession through study of accounting principles, theories and practices with related study in law, finance, management and data processing operations.

The curriculum is designed to prepare the individual for entry-level accounting positions, such as junior accountant, bookkeeper, accounting clerk, cost clerk, payroll clerk and related data processing occupations.

With experience and additional education, the individual will be able to advance to positions such as systems accountant, cost accountant, budget accountant and property accountant.

The Associate in Applied Science Degree—Accounting will be awarded by the College upon completion of this program.

For more information about the Accounting Program, call the program director, 342-6595, weekdays, 7:30 a.m. to 4:30 p.m.

Note: Students interested in transferring to a senior institution should enroll in the 1000 and 2000 mathematics and communications courses noted in the footnotes.

The first step to enroll: Call the CPCC Information/Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
EDP 3310 Microcomputer Operations	2	2	3
ACC 1604 Principles of Accounting I	5	2	6
*COM 1304 Introd. to Communications	3	0	3
§FIN 3314 Business Mathematics I	3	0	3
BUS 3300 Human Relations	3	0	3
			18
SECOND QUARTER			
BUS 2304 Business Law I	3	0	3
*ACC 1605 Principles of Accounting II	5	2	6
*§FIN 3315 Business Mathematics II	3	0	3
*†COM3305 Communications II	3	0	3
ECO 2304 Economics I	3	0	3
			18
THIRD QUARTER			
*BUS 2305 Business Law II	3	0	3
*ACC 2626 Intermediate Accounting I	5	2	6
*ECO 2305 Economics II	3	0	3
*†COM3306 Communications III	3	0	3
FIN 4334 Business Finance I	3	0	3
			18

*Prerequisite or corequisite required, check course description.

§MAT 1504, 1505 or MAT 1514 may be taken if student has met placement test requirements.

†COM 1305 and 1306 are recommended for students who may later decide to transfer to a senior institution.

‡SEC 3404 Typing I required as second quarter elective for students who have not had one year of high school typing.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FOURTH QUARTER			
*ACC 2627 Intermediate Accounting II	5	2	6
ACC 4434 Taxes—Individual	3	2	4
*FIN 4335 Business Finance II	3	0	3
EDP 2306 Computer Programming I (Business)	2	2	3
‡Elective	3	0	3
			19
FIFTH QUARTER			
SPH 1300 Oral Communications	3	0	3
*ACC 4447 Advanced Accounting	3	2	4
*ACC 4425 Taxes—Business and Fiduciary	3	2	4
*EDP 2307 Computer Programming II (Business)	2	2	3
*ACC 4414 Microcomputer Accounting	2	4	4
			18
SIXTH QUARTER			
*ACC 4444 Cost Accounting	3	2	4
*ACC 4404 Auditing	3	2	4
*EDP 4314 Systems and Procedures	3	0	3
EDP 3405 Microcomputer Programming—BASIC	3	2	4
‡Elective	3	0	3
			18
Total Credit Hours			109

‡ELECTIVES

With the approval of an adviser the student may select six hours from the following:

BUS	1400	Introduction to Business
*FIN	4317	Financial Statement Analysis
FIN	3303	Personal Investing
*FIN	4336	Financial Management
*EDP	3406	Microcomputer Programming—Advanced BASIC
FIN	4350	Personal Money and Financial Management I
*BUS	2306	Business Law III
FIN	4390	Personal Money and Financial Management II
BUS	3304	Business Statistics
FIN	4303	Personal Estate Planning

Air Conditioning, Heating and Refrigeration (VO24)

The Air conditioning, Heating and Refrigeration curriculum develops an understanding of the basic principles involved in the construction, installation, operation and maintenance of climate control equipment. Courses in blueprint reading, duct construction, welding, circuits and controls, math, science and general education are included to help provide supporting skills necessary for mechanics to function successfully in the trade.

Air conditioning, heating, and refrigeration mechanics install, maintain, service and repair environmental control systems in residences, department and food stores, office buildings, industries, restaurants, institutions, and commercial establishments. Job opportunities exist with companies that specialize in air conditioning, heating, and commercial refrigeration installation and service. Graduates should be able to assist in installing mechanical equipment, duct work, and electrical controls necessary in residential and commercial projects. With experience, graduates should be able to service various air conditioning, heating, and refrigeration components; troubleshoot systems; and provide the preventive maintenance required by mechanical equipment. They may be employed in the areas of maintenance, installation, sales, and service in the field of air conditioning, heating and cooling.

A Diploma in Air Conditioning, Heating and Refrigeration will be awarded by the College upon completion of this program. Graduates may apply for advanced standing in the Air Conditioning, Heating and Refrigeration Technology Program

NOTE: Students are expected to furnish tools for selected courses. A list of these tools can be obtained from one of the instructors or the program counselor.

For more information or answers to questions, call the program director, 342-6890 or 342-6930 weekdays, 8 a.m. to 5 p.m.

The first step to enroll: Call the CPCC Information/Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
AHR 5224	A/C, Heating and Refrigeration Blueprint Reading	1	2	2
AHR 5301	Basic Electricity	3	0	3
AHR 5312	Shop Practices	2	3	3
AHR 5313	Refrigeration Service Principles	2	3	3
AHR 5411	Air Conditioning, Heating and Refrigeration Fundamentals	4	0	4
PHY 5304	Shop Science I	2	2	3
				18
SECOND QUARTER				
*AHR 5314	Automatic Controls	2	3	3
*AHR 5321	Commercial Refrigeration Installation	2	3	3
*AHR 5322	Commercial Refrigeration Service	2	3	3
*AHR 5323	Oil Burners	2	3	3
*AHR 5394	Mechanical Codes	3	0	3
AHR 5401	Basic Calculations for Heating and Refrigeration Mechanics	4	0	4
				19
THIRD QUARTER				
AHR 5200	Solar Domestic Hot Water Installation	1	3	2
*AHR 5204	Wiring Diagrams and Trouble-shooting for A/C Systems	1	3	2
*AHR 5333	Liquid Heat—1-Pipe and 2-Pipe Systems	2	3	3
*AHR 5431	Air Conditioning—Residential/ Commercial	3	3	4
COM 5500	Communications Skills	5	0	5
HSA 5200	Human Relations	2	0	2
				18
FOURTH QUARTER				
*AHR 5341	Gas Heat	2	3	3
*AHR 5342	Electric Heat	2	3	3
*AHR 5443	All Weather Systems—Conventional	3	3	4
*AHR 5444	All Weather Systems—Heat Pumps	2	6	4
WLD 5210	Basic Oxyacetylene Welding	1	3	2
				16
Total Credit Hours				71

*Prerequisite or corequisite required; check course description.

Air Conditioning, Heating and Refrigeration Technology
(TO36)

The Air Conditioning, Heating and Refrrigeration Technology curriculum develops an understanding of the principles involved in designing, planning, installing, operating, troubleshooting and organizing maintenance of climate control equipment and systems. Graduates of the Air Conditioning, Heating and Refrigeration Technology curriculum should be able to assist in planning installations, designing systems, and organizing maintenance and work scheduling. In addition, they should be able to assist in installing, servicing, and operating environmental control systems in residential and commercial establishments. Job opportunities exist with companies that specialize in residential, commercial and industrial air conditioning, heating, and refrigeration systems, design, installation, and service. Graduates should be able to assist in designing mechanical equipment, ductwork, and electrical controls required in residential and commercial projects. With experience, Graduates should be able to design various air conditioning, heating and refrigeration systems and function efficiently in working with systems designers, engineers, mechanics, sales engineers and others in the field. Technicians may be employed in areas of systems design, engineering assistance, estimating, sales, maintenance scheduling, installation and service management in the growing field of air conditioning, heating and cooling.

The Associate in Applied Science Degree—Air Conditioning, Heating and Refrigeration Technology will be awarded by the College upon completion of this program.

NOTE: Students are expected to furnish tools for selected courses. A list of these tools can be obtained from one of the instructors or the program counselor.

For more information or answers to questions, call the program director, 342-6890 or 342-6930, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: Call the CPCC Information/Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
AHR 5224	A/C, Heating and Refrigeration Blueprint Reading	1	2	2
AHR 5301	Basic Electricity	3	0	3
AHR 5312	Shop Practices	2	3	3
AHR 5313	Refrigeration Service Principles	2	3	3
AHR 5411	Air Conditioning, Heating and Refrigeration Fundamentals	4	0	4
PHY 5304	Shop Science I	2	2	3
				18
SECOND QUARTER				
*AHR 5314	Automatic Controls	2	3	3
*AHR 5321	Commercial Refrigeration Installation	2	3	3
*AHR 5322	Commercial Refrigeration Service	2	3	3
*AHR 5323	Oil Burners	2	3	3
*AHR 5394	Mechanical Codes	3	0	3
AHR 5401	Basic Calculations for Heating and Refrigeration Mechanics	4	0	4
				19
THIRD QUARTER				
AHR 5200	Solar Domestic Hot Water Installation	1	3	2
*AHR 5204	Wiring Diagrams and Trouble-shooting for A/C Systems	1	3	2
*AHR 5333	Liquid Heat—1-Pipe and 2-Pipe Systems	2	3	3
*AHR 5431	Air Conditioning—Residential/ Commercial	3	3	4
*COM 1304	Introduction to Communications	3	0	3
WLD 5210	Basic Oxyacetylene Welding	1	3	2
				16
FOURTH QUARTER				
*AHR 5341	Gas Heat	2	3	3
*AHR 5342	Electric Heat	2	3	3
*AHR 5443	All Weather Systems—Conventional	3	3	4
*AHR 5444	All Weather Systems—Heat Pumps	2	6	4
*COM 3305	Communications II	3	0	3
				17
FIFTH QUARTER				
*AHR 4304	Introduction to Psychrometrics	3	0	3
*AHR 4361	Residential Air Distribution and Balance	2	2	3
*AHR 4452	Residential A/C Systems Design	3	2	4
*AHR 4463	Control Systems	3	2	4
*COM 3306	Communications III	3	0	3
				17
SIXTH QUARTER				
*AHR 4451	Commercial Refrigeration Systems Design	4	0	4
*AHR 4453	Commercial A/C Design	3	2	4
*AHR 4462	Commercial Air Distribution and Balance	3	2	4
‡Elective	(General Education)	3	0	3
‡Elective		2	0	2
				17

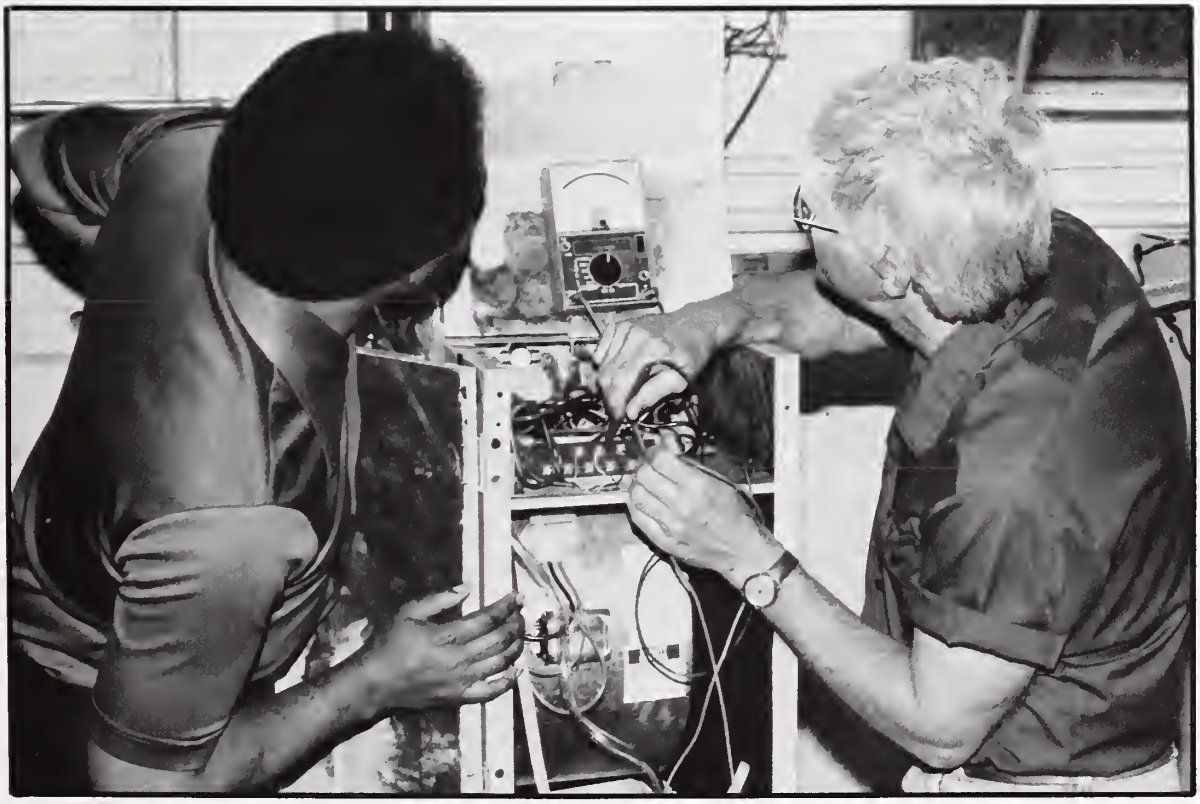
(Continued)

SEVENTH QUARTER			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
*AHR	4325	Air Conditioning, Heating and Refrigeration Drawing and Sketching	1	4	3
*AHR	4372	Hydronic Distribution Systems Design	3	0	3
*AHR	4342	Hydronic Systems Balance	2	2	3
*AHR	4471	Installation & Service Problems	2	6	4
‡Elective (General Education)			3	0	3
ECO	3300	Introduction to Economics	3	0	3
					19

Total Credit Hours 123

*Prerequisite or corequisite required; check course descriptions.

‡GENERAL EDUCATION ELECTIVES:					
SPH	1300	Oral Communications	3	0	3
SPH	2304	Public Speaking	3	0	3
PSY	2504	General Psychology	5	0	5
SOC	1301	Group Interaction	3	0	3



Architectural Technology (T041)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions

The Architectural Technology curriculum provides individuals with knowledge and skills that will lead to employment and advancement in the field of architectural technology. Technical courses are included which will enable the graduate to advance into related areas of work as job experience is obtained or to continue toward an advanced degree in an associated field of technology.

Architectural technicians translate the architect's design sketches into complete and accurate plans and drawings for construction purposes. The technician will be involved in work requiring a knowledge of drafting, construction materials, mechanical and structural systems, estimating, building codes, and specifications.

Initial employment opportunities exist with architectural and engineering firms, private utilities, contractors and municipal governments.

The curriculum at Central Piedmont Community College includes an emphasis on computer-aided-drafting (CAD) and related computer courses to prepare the graduates for employment in the expanding CAD area.

Graduates may also continue study for two or more years at a senior institution offering the Bachelor of Engineering Technology (BET) program.

The Associate of Applied Science Degree—Architectural Technology will be awarded by the College upon completion of this program.

For more information contact the program counselor at (704) 342-6881, the Architectural Technology Program director at (704) 342-6548/6913, or the Technology Division head at (704) 342-6557, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
ARC 3334	Architectural Drafting I: Basic and Residential	1	6	3
*CIV 3504	Surveying I	3	6	5
MAT 3507	Engineering Technology Math I	5	0	5
*COM 1304	Intro.to Communications	3	0	3
ARC 4200	Architectural Blueprint Reading and Specifications	1	3	2
				18
SECOND QUARTER				
*ARC 3314	Architectural Computer Drafting (CAD) AutoCAD I	1	6	3
*ARC 3335	Architectural Drafting II: Site Planning and Commercial	1	6	3
*MAT 3508	Engineering Technology Math II	5	0	5
*PHY 1404	Physics I: Basic Mechanics	3	2	4
*EDP 3405	Microcomputer Programming: Basic	3	2	4
				19
THIRD QUARTER				
*ARC 3336	Architectural Drafting III: Commercial A	1	6	3
*CIV 3514	Statics	3	6	5
CIV 3306	Construction Materials and Methods	2	3	3
*MAT 3509	Engineering Technology Math III	5	0	5
*COM 3305	Communications II	3	0	3
				19
FOURTH QUARTER				
*ARC 4337	Architectural Drafting IV: Commercial B	1	6	3
*CIV 3524	Strength of Materials	3	6	5
*ARC 4300	Architectural Mechanical Equipment	2	3	3
*CIV 4300	Codes and Contracts	2	3	3
*COM 3306	Communications III	3	0	3
				17
FIFTH QUARTER				
*ARC 4338	Architectural Drafting V: Mechanical, Electrical, Plumbing	1	6	3
*CIV 4427	Steel and Timber Design	3	3	4
CIV 4302	Plain Concrete	1	6	3
*PHY 1405	Physics II: Elastic and Thermal Properties of Matter	3	2	4
*ARC 3324	Architectural Computer Drafting (CAD)—Large Systems I	1	6	3
				17
SIXTH QUARTER				
*ARC 4339	Architectural Drawing VI: Structural	1	6	3
*CIV 4434	Reinforced Concrete Design	3	3	4
SPH 1300	Oral Communications	3	0	3
*ARC 3325	Architectural Computer Drafting (CAD)—Large Systems II	1	6	3
†General Education Elective		3	0	3
				16

*Prerequisite or corequisite required; check course description.

(Continued)

SEVENTH QUARTER	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
*ARC 4440 Architectural Drafting VII: Working Drawings	1	9	4
*CIV 4305 Construction Estimates	2	3	3
*PHY 1406 Physics III: Electricity and Magnetism	3	2	4
†Technical Elective			2
†General Education Elective	3	0	3
			16

Total Hours Credit 116

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

Suggested Technical Electives—

ARC 3200 Introduction to Architecture
ARC 3210 Design Your House Plans
ARC 3212 Home Construction Cost Estimating
ARC 3301 Build Your Home
ARC 3302 Home Construction Methods and Details
ARC 3312 Residential Working Drawings
ARC 3318 Architectural Computer Drafting (CAD)—Fastdraft
ARC 4284 Cooperative Work Experience
ARC 4302 Architectural Model Construction
ARC 4310 Energy Efficient and Solar Home Design
ARC 4345 Architectural Presentation Drawing
CIV 4227 Microcomputer Application Project

General Education Electives—

These electives must be chosen from the areas of communications, social science, and/or humanities.

Architectural Technology is a TAC/ABET accredited program.

Automotive Body Repair (V001)

The Automotive Body Repair curriculum provides training in the use of equipment and materials of the auto body mechanic trade. Students study the construction of the automobile body and techniques of auto body repairing, rebuilding and refinishing.

Repairing, straightening, aligning, metal finishing, and painting of automobile bodies and frames are typical jobs performed. Job titles include automobile body repairperson, automotive painter, and frame and chassis repairperson. Students completing this curriculum may find employment with franchised automobile dealers, independent garages, or may start their own business.

A Diploma in Automotive Body Repair will be awarded by the College upon completion of this program.

NOTE: Students must furnish required hand tools, textbooks, respirator, and protective clothing. A list of these items can be obtained from one of the instructors or the program counselor.

For more information or answers to questions, call the program director, 342-6890 or 342-6930, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
AUB 5100	Seminar I	1	0	1
AUB 5201	Trim and Glass	1	3	2
*AUB 5223	Fiberglass and Metallic Fillers	1	3	2
*AUB 5224	Panel Installation	1	3	2
AUB 5421	Metal Finish and Plastic Fillers	2	6	4
AUT 5403	Basic Calculations for Auto, Diesel and Power Mechanics	4	0	4
WLD 5210	Basic Oxyacetylene Welding	1	3	2
				17
SECOND QUARTER				
AUB 5101	Seminar II	1	0	1
*AUB 5233	Lacquer Painting	1	3	2
*AUB 5234	Enamel Painting	1	3	2
*AUB 5235	Special Finishes	1	3	2
AUB 5431	Paint Equipment and Preparation	2	6	4
MGT 5200	Shop Management	2	0	2
HSA 5200	Human Relations	2	0	2
WLD 5220	Basic Arc Welding	1	3	2
				17
THIRD QUARTER				
AUB 5102	Seminar III	1	0	1
AUB 5202	Auto Renewal	1	3	2
*AUB 5214	Door and Fender Alignment	1	3	2
AUT 5254	Automotive Heating and Air Conditioning	1	3	2
AUB 5412	Frame and Unitized Body Alignment	2	6	4
AUT 5404	Auto Chassis and Suspension Systems	2	6	4
WLD 5250	Basic Gas Metal Arc Welding	1	3	2
				17

FOURTH QUARTER				
AUB 5203	Estimating Auto Body Damage	2	0	2
*AUB 5344	Body Shop Applications I	0	9	3
*AUB 5345	Body Shop Applications II	0	9	3
*AUB 5346	Body Shop Applications III	0	9	3
COM 5500	Communication Skills	5	0	5
‡Elective		—	—	4
				20
Total Credit Hours				71

*Prerequisite or corequisite required; check course description.

‡ELECTIVES RECOMMENDED:

ART 1317	Furniture Restoration I	0	6	3
*AUB 5347	Body Shop Applications IV	0	9	3
AUT 5415	Electrical Systems I	2	6	4
BUS 1400	Introduction to Business	3	2	4
DSL 5300	Diesel Fundamentals	2	3	3
MAC 5201	Machine Shop Practices	1	3	2
MGT 3303	Small Business Management	3	0	3
PME 5211	Small Engine Repair I	1	3	2

Automotive Mechanics (V003)

The Automotive Mechanics curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair and adjust automotive vehicles. Manual skills are developed in practical shop work and the technical understanding of the operating principles involved in the modern automobile is taught through class assignments, discussions and shop practices.

Automobile mechanics maintain and repair mechanical, electrical and body parts of passenger cars, trucks and buses. In some communities and rural areas they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test to determine the causes of faulty operation. They repair or replace defective parts to restore the vehicle or machine to proper operating condition and use shop manuals and other technical publications as references for technical data. Persons completing this curriculum may find employment with franchised automobile dealers, independent garages, or may start their own business.

All classes available each quarter.

Diploma in Automotive Mechanics will be awarded by the College upon successful completion of this program.

NOTE: Students must furnish required hand tools and protective clothing, as well as textbooks. A list of these items can be obtained from one of the instructors or the program counselor.

For more information or answers to questions, call the program director, 342-6858 or 342-6930, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
AUT 5401	Internal Combustion Engines I	2	6	4
AUT 5405	Basic Automotive Fuel Systems	2	6	4
AUT 5415	Electrical Systems I	2	6	4
AUT 5403	Basic Calculations for Auto, Diesel Mechanics	4	0	4
PHY 5304	Shop Science I	2	2	3
				19
SECOND QUARTER				
*AUT 5402	Internal Combustion Engines II	2	6	4
*AUT 5416	Electrical Systems II	2	6	4
AUT 5425	Auto Power Train Systems I	2	6	4
AUT 5254	Automotive Heating and Air Conditioning	1	3	2
PHY 5305	Shop Science II	2	2	3
				17
THIRD QUARTER				
AUT 5404	Auto Chassis and Suspension Systems	2	6	4
AUT 5426	Auto Power Train Systems II	2	6	4
*AUT 5307	Auto Electrical and Fuel Systems Applications	1	6	3
WLD 5210	Basic Oxyacetylene Welding	1	3	2
MAC 5201	Machine Shop Practices	1	3	2
‡Elective—Technical		—	—	3
				18
FOURTH QUARTER				
*AUT 5308	Auto Chassis and Suspension Applications	1	6	3
*AUT 5427	Auto Power Train Systems III	2	6	4
DSL 5300	Diesel Fundamentals	2	3	3
COM 5500	Communications Skills	5	0	5
HSA 5200	Human Relations	2	0	2
				17

Total Credit Hours 71

*Prerequisite or corequisite required; check course description.

‡**TECHNICAL ELECTIVES:**

AUT 5205	Fundamentals of Computer Controlled Fuel Systems	2	0	2
DSL 5304	Hydraulics and Pneumatics	2	2	3
AUB 5201	Trim and Glass	1	3	2
AUT 5303	Preventive Maintenance and Safety Inspection	2	2	3

Automotive Technology (T176)

The Automotive Technology curriculum is designed to meet the need for preparing highly trained technicians to service and repair automobiles and light trucks equipped with highly technical electrical, electronics, and emission control systems. Emphasis is placed on the operation and servicing of the power train components, electrical systems, fuel systems, chassis and suspension and emission controls of gasoline and diesel engine vehicles. Upon completion of this curriculum, the person should have the theoretical knowledge and background to understand the systems of the newer model automobiles and should be prepared to work as a technician servicing automobiles and light duty trucks.

The Associate in Applied Science Degree—Automotive Technology will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, 342-6858 or 342-6930, weekdays, 8 a.m. to 5 p.m.

NOTE: Students must furnish required hand tools and protective clothing, as well as textbooks. A list of these items can be obtained from one of the instructors or the program counselor.

The first step to enroll: Call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER [Any Quarter]				
AUT 5401	Internal Combustion Engines I	2	6	4
AUT 5405	Basic Automotive Fuel Systems	2	6	4
AUT 5415	Electrical Systems I	2	6	4
AUT 5403	Basic Calculations for Auto, Diesel Mechanics	4	0	4
PHY 5304	Shop Science I	2	2	3
				19
SECOND QUARTER [Any Quarter]				
*AUT 5402	Internal Combustion Engines II	2	6	4
*AUT 5416	Electrical Systems II	2	6	4
AUT 5425	Auto Power Train Systems I	2	6	4
AUT 5254	Automotive Heating and Air Conditioning	1	3	2
PHY 5305	Shop Science II	2	2	3
				17
THIRD QUARTER [Any Quarter]				
AUT 5404	Auto Chassis and Suspension Systems	2	6	4
AUT 5426	Auto Power Train Systems II	2	6	4
†AUT 5307	Auto Electrical and Fuel Systems Applications	1	6	3
WLD 5210	Basic Oxyacetylene Welding	1	3	2
MAC 5201	Machine Shop Practices	1	3	2
AUT 5303	Preventive Maintenance and Safety Inspection	2	2	3
				18
FOURTH QUARTER [Any Quarter]				
AUT 5205	Fundamentals of Computer Controlled Fuel Systems	2	0	2
*AUT 5308	Auto Chassis and Suspension Applications	1	6	3
*AUT 5427	Auto Power Train Systems III	2	6	4
DSL 5300	Diesel Fundamentals	2	3	3
*COM 1304	Introd. to Communication	3	0	3
‡Elective—Technical		—	—	2
				15

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIFTH QUARTER Fall Quarter Only]				
AUT 4300	Automotive Emission Systems	2	2	3
*AUT 4401	Automotive Electronics	3	2	4
DSL 4400	Automotive Diesel Engines	2	6	4
*COM 3305	Communications II	3	0	3
‡	Elective—General Education	—	—	3
				17
SIXTH QUARTER [Winter Quarter Only]				
*AUT 4402	Instrumentation and Chassis Electrical Systems	3	2	4
*AUT 4406	Computer Controlled Fuel Systems	3	2	4
*COM 3306	Communications III	3	0	3
FIN 3314	Business Mathematics I	3	0	3
DSL 5304	Hydraulics and Pneumatics	2	2	3
				17
SEVENTH QUARTER [Spring Quarter Only]				
MGT 3303	Small Business Management	3	0	3
*AUT 4308	Auto Servicing	1	6	3
‡Elective—General Education				3
‡Elective—General Education		—	—	3
				12

Total Credit Hours 115

*Prerequisite or corequisite required; check course description.

‡ELECTIVES:

Technical—

AUB 5201	Trim and Glass	1	3	2
AUT 5295	Auto Mechanics Co-Op	0	20	2

General Education—

The student may choose a course with the approval of program adviser.

Banking and Finance (T112)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The purposes of the Banking and Finance curriculum are to prepare students to enter the banking and finance industries, to provide an educational program for banking employees wanting to receive the American Institute of Banking certificate, and to provide an educational program to upgrade or retrain individuals presently employed in the banking or finance industry.

These purposes will be fulfilled through study in areas such as banking or finance principles, theories and practices; teller operations; lending and collections procedures; financial analysis; marketing and public relations.

This curriculum will provide the opportunity for an individual to enter a variety of banking or finance jobs in retail banks, commercial banks, government lending agencies, mortgage banks and credit companies.

The Associate in Applied Science Degree—Banking and Finance will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6493, weekdays, 9 a.m. to 1 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
BAF	3300	Introduction to Commercial Lending	3	0	3
BAF	3400	Principles of Banking	4	0	4
BAF	3402	Law and Banking	4	0	4
BAF	3403	Money and Banking	4	0	4
BAF	4409	Consumer Lending	4	0	4
BAF	4410	Bank Investments	4	0	4
BAF	4416	The Trust Business	4	0	4
BAF	4418	Savings Banking Today	4	0	4
BUS	1400	Introduction to Business	3	2	4
BUS	2304	Business Law I	3	0	3
*BUS	2305	Business Law II	3	0	3
*MGT	2314	Principles of Management	3	0	3
MGT	4330	Supervision	3	0	3
ACC	1604	Principles of Accounting I	5	2	6
*ACC	1605	Principles of Accounting II	5	2	6
EDP	1500	Computer Literacy	5	0	5
†FIN	3314	Business Mathematics I	3	0	3
†FIN	3315	Business Mathematics II	3	0	3
EDP	4314	Systems and Procedures	3	0	3
FIN	4336	Financial Management	3	0	3
FIN	4400	Analyzing Financial Statements	4	0	4
SPH	1300	Oral Communications	3	0	3
BUS	3300	Human Relations	3	0	3
COM	1304	Intro. to Communications	3	0	3
*COM	3305	Communications II	3	0	3
*COM	3306	Communications III	3	0	3
ECO	2304	Economics I	3	0	3
*ECO	2305	Economics II	3	0	3
§Technical Electives					20
Total Credit Hours					121

§TECHNICAL ELECTIVES:

After consultation with an adviser, choose 20 credit hours.

BAF	3401	Bank Management	4	0	4
BAF	4403	International Banking	4	0	4
BAF	4404	Branch Management	4	0	4
BAF	4405	Corporate Banking: A Practical Approach to Lending	4	0	4
BAF	4408	Inside Commercial Banking	4	0	4
BAF	4411	Loan Officer Development	4	0	4
BAF	4412	Marketing for Bankers	4	0	4
BAF	4413	Negotiable Instruments and the Payments Mechanism	4	0	4
BAF	4415	Savings and Time Deposit Banking	4	0	4
BAF	4420	Deposit Operations	4	0	4

*Prerequisite or corequisite required; check course description.

†MAT 1504, MAT 1505 or MAT 1514 may be taken if student has met requirements.

NOTE: During the admissions process, students are encouraged to obtain a course requirement list from the program director or program counselor.

Bookkeeping/Clerical (T150)

Purposes of the Bookkeeping/Clerical curriculum are to prepare the individual to enter occupations which require training in both bookkeeping and clerical skills; provide an educational program for individuals wanting training to work in small businesses and other areas where a diversification of skills is needed; and provide opportunities for individuals wanting to fulfill professional or general interest, as well as those individuals interested in upgrading or retraining.

Purposes will be fulfilled through study in areas such as maintaining journals and ledgers, preparing financial statements, submitting tax forms, preparing cost data, typing, managing records, operating business machines and other basic office skills.

Through knowledge and skills, the individual will be able to perform bookkeeping and clerical activities and through the development of personal competencies and qualities will be able to enter business and industry as a bookkeeper or clerk in a variety of areas.

The Associate in Applied Science Degree—Bookkeeping/Clerical will be awarded by the College upon completion of this program.

For more information on this program, call the program director, 342-6595, weekdays, 7:30 a.m. to 4:30 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
SEC 3404 Typing I	3	2	4
ACC 1604 Principles of Accounting I	5	2	6
COM 1304 Introd. to Communications	3	0	3
§FIN 3314 Business Mathematics I	3	0	3
			16
SECOND QUARTER			
*SEC 3405 Typing II	3	2	4
*ACC 1605 Principles of Accounting II	5	2	6
†*COM 3305 Communications II	3	0	3
§*FIN 3315 Business Mathematics II	3	0	3
			16
THIRD QUARTER			
*SEC 3406 Typing III	3	2	4
*ACC 2626 Intermediate Accounting I	5	2	6
SEC 4370 Records Management	3	0	3
†*COM 3306 Communications III	3	0	3
*SEC 3304 Office Machines	2	2	3
			19
FOURTH QUARTER			
*ACC 2627 Intermediate Accounting II	5	2	6
*ACC 4425 Taxes—Business and Fiduciary	3	2	4
*SEC 4407 Typing IV	3	2	4
BUS 3300 Human Relations	3	0	3
			17

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIFTH QUARTER			
ACC 3500 Small Business Accounting	5	0	5
BUS 2304 Business Law I	3	0	3
*FIN 4334 Business Finance I	3	0	3
EDP 3405 Microcomputer Programming: BASIC	3	2	4
ECO 2304 Economics I	3	0	3
			18
SIXTH QUARTER			
*ACC 4414 Microcomputer Accounting	2	4	4
SPH 1300 Oral Communications	3	0	3
*ECO 2305 Economics II	3	0	3
‡Electives 6	0	6	
‡Electives—free	3	0	3
			19

Total Credit Hours 105

*Prerequisite or corequisite required; check course description.

§MAT 1504, MAT 1505 or MAT 1514 may be taken if student has met placement test requirements.

†COM 1305 and COM 1306 are recommended for students who may later decide to transfer to a senior institution.

‡**ELECTIVES:**

The student may select six hours from the following courses, with the approval of an adviser.

*BUS 2305 Business Law II
*FIN 4335 Business Finance II
FIN 3303 Personal Investing
BUS 1400 Introduction to Business
FIN 4350 Personal Money and FInancial Management I
*EDP 3406 Microcomputer Programming—Advanced BASIC
BUS 3304 Business Statistics
EDP 3310 Microcomputer Operations
ACC 4434 Taxes—Individual

‡Free—choose any course with the approval of your program adviser.

Business Administration (T018)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The Business Administration curriculum is designed to prepare students for entry into middle-management occupations in various businesses and industries. The curriculum provides an overview of the business and industrial world—its organization and management.

The purpose of the curriculum will be fulfilled through courses designed to develop competency in: understanding the principles of organization and management in business operations, utilizing modern techniques to make decisions, understanding the economy through study and analysis of the role of production and marketing, communicating orally and in writing, and interpersonal relationships.

Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in middle-management activities in business or industry.

For more information or answers to questions, call the program director, (704) 342-6646, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
BUS 1400	Introduction to Business	3	2	4
COM 1304	Intro. to Communications	3	0	3
ECO 2304	Economics I	3	0	3
EDP 1500	Computer Literacy	5	0	5
†FIN 3314	Business Mathematics I	3	0	3
				18

†*MAT 1504, MAT 1505, MAT 1514, MAT 1515 may be taken if the student has met requirements.*

SECOND QUARTER				
ACC 1605	Principles of Accounting I	5	2	6
*COM 3305	Communications II	3	0	3
*ECO 2305	Economics II	3	0	3
*FIN 3315	Business Mathematics II	3	0	3
*MGT 2314	Principles of Management	3	0	3
SPH 1300	Oral Communications	3	0	3
				21
THIRD QUARTER				
*ACC 1605	Principles of Accounting II	5	2	6
*COM 3306	Communications III	3	0	3
*ECO 2306	Economics III	3	0	3
MGT 3303	Small Business Management	3	0	3
*MGT 4334	Management Seminar	3	0	3
Elective(s)		3	0	3
				21

*Prerequisite or corequisite required; check course description.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FOURTH QUARTER				
BUS 2304	Business Law I	3	0	3
BUS 4340	Consumer Credit *or*			
BUS 4341	Commercial Credit	3	0	3
*EDP 3324	Advanced Microcomputer Operations	2	2	3
MGT 4330	Supervision	3	0	3
MGT 4331	Administrative Office Management	3	0	3
MKT 1304	Marketing I	3	0	3
				18
FIFTH QUARTER				
*BUS 2305	Business Law II	3	0	3
*BUS 3304	Business Statistics	3	0	3
*FIN 4334	Business Finance I	3	0	3
MGT 4332	Personnel Management I	3	0	3
*MGT 4333	Production, Planning & Control	3	0	3
*MKT 1305	Marketing II	3	0	3
				18
SIXTH QUARTER				
*BUS 2306	Business Law III	3	0	3
BUS 3300	Human Relations	3	0	3
INS 3340	Principles of Risk and Insurance	3	0	3
*MGT 4337	Personnel Management II	3	0	3
*MGT 4338	Labor-Management Relations	3	0	3
MKT 4321	Advertising	3	0	3
Elective(s)		3	0	3
				21

Total Credit Hours 117

Civil Engineering Technology (T038)

Students should consult with a faculty adviser or counselor regarding transferability of this program to senior institutions.

Civil Engineering Technology curriculum provides the specialized background and related theory for technicians who work primarily with architects and engineers in the field of construction. The Civil Engineering Technician carries out many of the planning and supervising tasks necessary in the construction of transportation systems such as highways, pipelines, railroads, airfields, and transmission lines; structures for residential and commercial buildings, bridges, dams, and power plants; and water and waste treatment systems. The graduate may perform job tasks in planning, drafting, estimating, supervising, inspecting, or managing construction projects. Other duties might include ordering materials, interpreting plans and specifications, structural detailing and drafting work and making engineering computation of earthwork, storm drainage and property surveys.

Upon graduation from this program, the civil engineering technician may qualify for various jobs such as surveying instrumentation and/or party chief, field or laboratory materials tester, construction foreman, field engineering technician or superintendent, expeditor, manager, estimator, construction materials or equipment salesperson, inspector, drafter or structural detailer. Graduates of this program may receive credit toward qualifying to be a land surveyor. They may also continue their education toward a bachelor's degree in engineering technology.

The Civil Engineering Technology program is a comprehensive program providing classroom and laboratory experiences in the practical application of both fundamental and specialized civil engineering technology principles. Courses in drafting, architectural technology and civil engineering technology, complemented by courses in mathematics, physics, computer programming and communications give students progressive levels of job-related knowledge and skills. Students advance from basic courses to specialized civil engineering technology courses that furnish concentrated study in the practical application of modern technological knowledge and skills needed in today's construction industry.

This program is designed to produce civil engineering technicians with sound knowledge and skills in building technology, construction practices and surveying fundamentals. A balance between classroom, lab, field and computer activities provides the experience necessary for a successful career in Civil Engineering Technology.

The Associate in Applied Science Degree—Civil Engineering Technology will be awarded by the College upon completion of this program. Graduates may also continue study for two or more years at a senior institution offering the Bachelor of Engineering Technology (BET) program.

For more information, contact the program counselor at (704) 342-6881, or the Civil Engineering Technology Program director, (704) 342-6578/6913, or the Technology Division head at (704) 342-6557, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
CIV 3306	Construction Materials and Methods	2	3	3
*CIV 3504	Surveying I	3	6	5
ARC 3334	Architectural Drafting I: Basic and Residential	1	6	3
*MAT 3507	Engineering Technology Math I	5	0	5
*COM 1304	Introduction to Communications	3	0	3
				19
SECOND QUARTER				
*ARC 3335	Architectural Drafting II: Site Planning and Commercial	1	6	3
ARC 4200	Architectural Blueprint Reading and Specifications	1	3	2
*MAT 3508	Engineering Technology Math II	5	0	5
*PHY 1404	Physics I: Basic Mechanics	3	2	4
*COM 3305	Communications II	3	0	3
				17

THIRD QUARTER				
*CIV 3514	Statics	3	6	5
*MAT 3509	Engineering Technology Math III	5	0	5
*COM 3306	Communications III	3	0	3
EDP 3405	Microcomputer Programming: BASIC	3	2	4
				17
FOURTH QUARTER				
*CIV 3524	Strength of Materials	3	6	5
*CIV 4407	Surveying II	2	6	4
*CIV 4300	Codes and Contracts	2	3	3
*ARC 4300	Architectural Mechanical Equipment	2	3	3
*PHY 1405	Physics II: Elastic and Thermal Properties of Matter	3	2	4
				19

*Prerequisite or corequisite required; check course description.

FIFTH QUARTER			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
*CIV	4408	Surveying III	2	6	4
*CIV	4427	Steel Design and Construction	3	3	4
CIV	4302	Plain Concrete	1	6	3
*PHY	1406	Physics III: Electrical and Magnetism	3	2	4
SPH	1300	Oral Communications	3	0	3
					18
SIXTH QUARTER					
*CIV	4305	Construction Estimates	2	3	3
*CIV	4434	Reinforced Concrete Design and Construction	3	3	4
*CIV	4344	Construction of Roads and Pavements	1	6	3
*ARC	4339	Architectural Drafting VI: Structural	1	6	3
†Technical Elective					2
†General Education Elective			3	0	3
					18

*Prerequisite or corequisite required; check course description.

SEVENTH QUARTER					
*CIV	4424	Foundations Design and Construction	3	3	4
*CIV	4307	Construction Project Management	2	3	3
†Technical Elective					2
†General Education Elective			3	0	3
					12

Total Hours Credit 120

†**ELECTIVES:**

Suggested Technical Electives—

ARC3314 Architectural Computer Drafting (CAD)—AutoCAD (I)
CIV 3201 Introduction to Construction Contracting
CIV 3314 Structural Drafting I (CAD)—AutoCAD
CIV 3315 Structural Detailing (CAD)—AutoCAD
CIV 3317 Civil Drafting (CAD)—AutoCAD
CIV 4220 Principles of Hydraulics
CIV 4227 Microcomputer Application Project
CIV 4284 Cooperative Work Experience

General Education Electives—

Courses must be chosen from the areas of communication, social science and/or humanities.

Civil Engineering Technology is a TAC/ABET Accredited Program.

Commercial Art Advertising Design (T070)

The commercial art advertising design field is highly competitive and challenging for the artist who wants to combine business and creative activities.

CPCC's Commercial Art Advertising Design program prepares students for a career in communication arts, traditionally known as "Commercial Art."

The skills of the artist, both visual and technical, are directed toward the production of effective advertising, design, and promotional pieces. Advertising agencies, art studios, newspapers, printers, and large corporations and businesses require the services of these artists,

Students in the Commercial Art Advertising Design program study advertising, illustration, layout, typography, design, photography, graphic communication, and production.

Commercial artists and advertising designers create and design layouts and artwork for print and audiovisual media. They may design and prepare letterheads, brochures, illustrations, and art for publication; produce package design; and prepare lettering, type and art for print and audiovisual media.

Job opportunities for graduates of this program may be in art and design studios, advertising agencies, department stores, industrial advertising departments, government agencies, television and film studios, and the printing and publishing industry.

The Associate in Applied Science Degree—Commercial Art Advertising Design will be awarded by the College upon completion of this program.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
ART 1300 Introduction to Art I	3	0	3
ART 1404 General Drawing I	2	4	4
ART 1424 Design I	2	4	4
ART 4201 Commercial Art Orientation I	2	0	2
COM 1304 Introduction to Communications	3	0	3
			16
SECOND QUARTER			
ART 1301 Introduction to Art II	3	0	3
*ART 1405 General Drawing II	2	4	4
*ART 1425 Design II	2	4	4
DFT 3300 Advertising Drafting	2	2	3
*COM 3305 Communications II	3	0	3
			17
THIRD QUARTER			
ART 1384 Basic Camera Techniques	3	0	3
*ART 1406 General Drawing III	2	4	4
*ADV 4454 Typography and Lettering I	2	4	4
FIN 3314 Business Mathematics I	3	0	3
*ART 1426 Design III	2	4	4
			18
FOURTH QUARTER			
*ADV 4455 Typography and Lettering II	2	4	4
*ADV 4424 Advertising Studio I	2	4	4
*ADV 4414 Advertising Production I	2	4	4
*ART 1385 Photo Lab Processes I	1	4	3
SOC 1301 Group Interaction	3	0	3
			18

FIFTH QUARTER			
*ADV 4425 Advertising Studio II	2	4	4
*ADV 4415 Advertising Production II	2	4	4
*COM 4324 Copywriting I	3	0	3
*ADV 3401 Illustration I	2	4	4
*ADV 1300 Photography for Advertising	1	4	3
			18
SIXTH QUARTER			
*ADV 4426 Advertising Studio III	2	4	4
*ADV 4416 Advertising Production III	2	4	4
*COM 4325 Copywriting II	3	0	3
*ADV 3404 Illustration II	2	4	4
PSY 3314 Principles of Humanistic Psychology	3	0	3
			18
SEVENTH QUARTER			
*ADV 4436 Advertising Thesis	2	4	4
*PRN 5364 Fundamentals of Offset Printing	1	4	3
*ADV 4427 Advertising Studio IV	2	4	4
*ADV 4417 Advertising Production IV	2	4	4
*ADV 3414 Computer Assisted Design	2	4	4
			19
Total Credit Hours			124

*Prerequisite or corequisite required; check course description.

Commercial Art Interior Design (T077)

Increasingly our interior living and work spaces are being developed for a more sophisticated society. The Commercial Art Interior Design program at CPCC trains people to design the interior spaces of today and tomorrow.

The Interior Design Curriculum prepares students for a variety of job opportunities in the fields of both residential and non-residential design. The course of study includes principles and elements of design, drafting, visual communication techniques, the history of styles, currently manufactured products, color theory, furniture design and construction, floor coverings, fabrics, window treatments, wall coverings, paint, accessories, and lighting. Students have the opportunity to cover the elements of interior design and to demonstrate their abilities in interior coordination.

Graduates of this program may qualify for various positions with the following types of employers: interior design studios, furniture manufacturers, architects, furniture design studios, photography studios and any type of business dealing with interior furnishings.

The Associate in Applied Science Degree—Commercial Art Interior Design will be awarded by the College upon completion of this program.

The first step to enroll: Call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
ART 1300 Introduction to Art I	3	0	3
ART 1404 General Drawing I	2	4	4
ART 1424 Design I	2	4	4
ART 4201 Commercial Art Orientation	2	0	2
FIN 3314 Business Mathematics I	3	0	3
*COM 1304 Introd. to Communications	3	0	3
			19
SECOND QUARTER			
ART 1301 Introduction to Art II	3	0	3
*ART 1405 General Drawing II	2	4	4
*ART 1425 Design II	2	4	4
ART 1384 Basic Camera Techniques	3	0	3
ARC 3334 Architectural Drafting I (Basic)	1	6	3
*COM 3305 Communications II	3	0	3
			20
THIRD QUARTER			
*ARC 3303 Interior Design Drafting I	1	6	3
EDN 4310 Design Sketching	0	6	3
*ART 1426 Design III	2	4	4
ARC 3303 Interior Design Drafting I	1	6	3
MKT 3320 Fundamentals of Selling	3	0	3
PSY 3314 Principles of Humanistic Psychology	3	0	3
			19

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FOURTH QUARTER			
*ARC 3304 Interior Design Drafting II	1	6	3
EDN 4316 Period Furniture and Furnishings I	3	0	3
EDN 4320 Introduction to Textiles	3	0	3
*EDN 4414 Applied Problems Studio I	2	4	4
*EDN 4404 Interior Presentations	2	4	4
ART 1310 History of Art I	3	0	3
			20
FIFTH QUARTER			
*ARC 3314 Architectural Computer Drafting (CAD) Auto CAD I	1	6	3
‡ART 1311 History of Art II	3	0	3
*EDN 4415 Applied Problems Studio II	2	4	4
*EDN 4307 Survey of Materials	1	4	3
*EDN 4317 Period Furniture and Furnishings II	3	0	3
			16
SIXTH QUARTER			
*EDN 4406 Contemporary Interiors	2	4	4
*EDN 4400 Professional Practices and Procedures	2	4	4
*EDN 4416 Applied Problems Studio III	2	4	4
*EDN 4202 Thesis	0	4	2
HOR 3312 Indoor Plants	2	2	3
			17

Total Credit Hours 111

*Prerequisite or corequisite required; check course description.

‡ART 1312 History of Art III may be substituted without division head approval.

Computer Engineering Technology (T040)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

This program is intended to provide the skills required to install, service and maintain computers, microprocessor and computer controlled equipment and computer peripheral devices.

The curriculum provides training in both the hardware and software areas of the computer field.

A sequence of introductory hardware courses provides the student with a strong background in physics, technical mathematics, electricity, electronics and digital logic circuits and concepts. Advanced course work provides a detailed study of: the logic of the central processing unit, the operation of integrated circuits in the central processing units, the operation and use of integrated circuit memory devices and the interfacing of the central processing unit to memory devices. Additional studies cover interfacing the central processing unit to external devices using both serial and parallel data transfer, the operation of large scale integration programmable interface units and their interfacing with the central processing unit, and the operation of computer peripheral devices such as video dusplays, printers, floppy disk storage systems, magnetic tape units, keyboards and the techniques of converting signal between the analog and digital forms.

The programming course work provides a sequence of study stressing good program design techniques, structured programming and program documentation. Rather than being familiar with a large number of programming languages, the student is expected to learn well a highly structured language, such as Pascal, and an assembly language. The importance of assembly language to the understanding of the operation of the central processing unit and the related computer units is stressed. Computer operating system concepts are discussed to provide a unified view of the hardware and software aspects of the the computer system.

The Computer Engineering Technology Program at CPCC prepares students with skills and knowledge in both the hardware and software aspects of computers and related systems. It provides a comprehensive background in the practical application of both computer and electronic circuits from the component to the system level. Courses are designed to present technical content in an order that provides students with progressive levels of job-related skills and knowledge. From fundamental programming and electrical circuits, students advance to specialized courses in computer circuits, microprocessors, microcomputer system design, software development, and computer maintenance.

Graduates may also continue study for two or more years at a senior institution offering the Bachelor of Engineering Technology (BET) program.

The Associate in Applied Science Degree—Computer Engineering Technology will be awarded by the College upon completion of this program.

For more information contact the program counselor at (704) 342-6881, the Computer/Electrical/Electronics Program director at (704) 342-6479, or the Technology Division head at (704) 342-6557, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
ELN 3104	Computer Technology Seminar	1	0	1
*ELN 3514	Basic Electricity (DC)	3	6	5
*EDP 3405	Microcomputer Programming—BASIC	3	2	4
*MAT 3507	Engineering Technology Math I	5	0	5
*COM 1304	Introduction to Communication	3	0	3
				18
SECOND QUARTER				
ELN 3105	Introduction to Computer Engineering Technology	1	0	1
*ELN 3515	Basic Electricity (AC)	3	6	5
DFT 3400	Electrical/Electronics Drafting	2	6	4
*MAT 3508	Engineering Technology Math II	5	0	5
*COM 3305	Communications II	3	0	3
				18
THIRD QUARTER				
*ELN 3404	Electronics I: Active Devices	3	3	4
*ELN 4444	Network Analysis	3	3	4
*MAT 3509	Engineering Technology Math III	5	0	5
*COM 3306	Communications III	3	0	3
†General Education Elective		3	0	3
				19
FOURTH QUARTER				
*ELN 3405	Electronics II: Analog Circuits	3	3	4
*ELN 4417	Computer Circuits I	3	3	4
*ELN 4525	Electrical Machines I	3	6	5
*PHY 1404	Physics I: Basic Mechanics	3	2	4
				17

(Continued)

FIFTH QUARTER			
*ELN 3406 Electronics III: Op-Amps	3	3	4
*ELN 4418 Computer Circuits II	3	3	4
*ELN 4547 Microprocessors I	3	6	5
*PHY 1405 Physics II: Matter	3	2	4
			17
SIXTH QUARTER			
*ELN 4100 Senior Seminar	1	0	1
*ELN 4327 Microcomputer Applications Project	1	6	3
*ELN 4557 Microprocessors II	3	6	5
†Technical Elective			3
*SPH 1300 Oral Communications	3	0	3
†General Education Elective	3	0	3
			18
SEVENTH QUARTER			
*ELN 4416 Computer Maintenance I	2	6	4
*ELN 4567 Microcomputer System Design	3	6	5
†ELN Technical Elective			3
PHY 1407 Physics IV: Modern Physics	3	2	4
			16
Total Credit Hours			123

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

Technical Electives—

ELN 3414 Industrial Instrumentation
ELN 4284 Cooperative Work Experience
ELN 4326 Electrical/Electronics Project
ELN 4345 Advanced E/E Topics
ELN 4401 Planning Electrical Installations
ELN 4404 Medical Electronics
ELN 4414 Receivers and Transmitters
ELN 4415 Industrial Programmable Controllers
ELN 4436 System Correction Procedure
ELN 4437 Microcomputer Applications in Robotics
ELN 4454 Data & Computer Communications I
ELN 4455 Data & Computer Communications II
ELN 4464 Printed Circuit Board Design & Layout (CAD) I
ELN 4465 Printed Circuit Board Design & Layout (CAD) II
ELN 4505 Power Electronics
ELN 4526 Electrical Machines II
EDP 3406 Microcomputer Programming: Advanced BASIC
EDP 1405 FORTRAN Programming II
EDP 1505 Computer Concepts & Fortran Programming I
MAT 4507 Engineering Technology Math IV

General Education Electives—

Courses must come from the areas of communication, social science or humanities.

Computer Operations (V012)

The Computer Operations curriculum is designed to prepare students for gainful employment as computer operators. This objective is fulfilled through study and application in areas such as data processing concepts and equipment, computer console coperations and data processing applications with related study in mathematics, communications and business-related courses.

Graduates may find employment in businesses and industries as computer and terminal operators or other related jobs in the computer/operations area.

An interview with a program counselor or faculty adviser for the Computer Operations program is required before entering this program. All prerequisites and corequisites must be met before enrolling in a particular class.

A Diploma in Computer Operations will be awarded by the College upon completion of this program.

For more information or answers to questions, call the Computer Science Division office, 342-6549, weekdays, 8 am to 5 pm.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
EDP 1500 Computer Literacy	5	0	5
*EDP 5613 Computer Operations I	5	2	6
*COM 1304 Introduction to Communications	3	0	3
FIN 3314 Business Mathematics I	3	0	3
			17
SECOND QUARTER			
*EDP 5424 Programming I—Operators	3	2	4
*EDP 5614 Computer Operations II	5	2	6
*COM 3305 Communications II	3	0	3
BUS 1400 Introduction to Business	3	2	4
			17
THIRD QUARTER			
*EDP 5425 Programming II—Operators	3	2	4
*EDP 5615 Computer Operations III	5	2	6
ACC 3600 General Accounting	5	2	6
*EDP 4314 Systems and Procedures	3	0	3
			19
FOURTH QUARTER			
*EDP 5616 Computer Operations IV	4	4	6
*EDP 5524 General Data Processing Applications	3	4	5
SPH 1300 Oral Communications	3	0	3
†General Education Elective	3	0	3
			17

Total Credit Hours 70

*Prerequisite or corequisite required; check course description.

†General Education Electives—
Courses must come from the areas of communications, applied sciences, and/or applied social studies.

Suggestions are:
COM 3306 Communications III
BUS 3300 Human Relations
ECO 3300 Introduction to Economics

NOTE: SEC 5200 recommended for students who have not had a typing course in high school or post-secondary.

Computer Programming, Business (T022)

Students should consult with a faculty adviser or program couselor regarding transferability of this program to senior institutions

The primary objective of the Business Computer Programming curriculum is to prepare individuals for gainful employment as computer programmers. The objective is fulfilled through study and application in areas such as computer and systems theories and concepts, data processing techniques, business operations, logic, flow charting, programming procedures and languages and types, uses and operation of equipment.

Entry-level jobs as computer programmer and computer programmer trainee are available. With experience and additional education, the individual may enter jobs such as data processing manager, computer programmer manager, systems analyst and systems manager.

The Associate in Applied Science Degree—Business Computer Programming will be awarded by the College upon completion of this program.

For more information or answers to questions, call the Computer Science Division office, 342-6549, weekdays, 8 am to 5 pm.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
EDP 1500 Computer Literacy	5	0	5
EDP 3514 Programming Logic and COBOL I	3	4	5
MAT 3504 Technical Mathematics I	5	0	5
*COM 1304 Intro. to Communications	3	0	3
			18
SECOND QUARTER			
EDP 3515 Programming Logic and COBOL II	3	4	5
*MAT 3505 Technical Mathematics II	5	0	5
*COM 3305 Communications II	3	0	3
*EDP 4425 Computer Systems I	3	2	4
			17
THIRD QUARTER			
*EDP 4435 Computer Systems II	3	2	4
*EDP 4314 Systems and Procedures	3	0	3
*EDP 3516 Programming Logic and COBOL III	3	4	5
ACC 1604 Principles of Accounting I	5	2	6
			18
FOURTH QUARTER			
*EDP 4517 Batch Data Processing Appl.	3	4	5
EDP 4444 RPG Programming ***OR*** EDP 3405 Microcomputer Programming—BASIC	3	2	4
*ACC 1605 Principles of Accounting II	5	2	6
			15
FIFTH QUARTER			
*EDP 4444 Advanced RPG Programming ***or*** *EDP 3406 Microcomputer Programming—Advanced BASIC	3	2	4
†Technical Elective			4
*COM 3306 Communications III	3	0	3
ACC/BUS/MKT/FIN Electives	—	—	6
			17
SIXTH QUARTER			
*EDP 4516 CICS	3	4	5
*EDP 4515 Applied Business Systems and Data Bases	5	0	5
†Technical Elective			3
ACC/BUS/MKT/FIN Elective	—	—	3
			16
SEVENTH QUARTER			
Social Sciences/Humanties Elective			3
*EDP 4518 Real Time Data Processing Appl.	3	4	5
SPH 1300 Oral Communications	3	0	3
†Technical Elective			3
ECO 3300 Introduction to Economics	3	0	3
			17
Total Credit Hours			118

*Prerequisite or corequisite required; check course description.

†RECOMMENDED TECHNICAL ELECTIVES

EDP 3324 Advanced Microcomputer Operations
EDP 3215 Microcomputer Software—LOTUS 1-2-3
EDP 3407 Programming Business Applications for Microcomputers
EDP 3410 C Language
EDP 3440 Assembly Language
EDP 3310 Microcomputer Operations
EDP 3335 Microcomputer Programming—MS-DOS
EDP 3217 Microcomputer Software—Data Base
EDP 4305 Computer Operations for Programmers
EDP 4546 Programming Business Applications in RPG

Correctional Services (T102)

Students should consult with the program director or counselor regarding transferability of this program to senior institutions.

The Correctional Services curriculum is designed to provide occupational training for individuals interested in the correctional services field. It offers practical and technical instruction to meet the requirements of various correctional agencies and provides the student with skills, knowledge, and attitudes necessary for employment at the operational level and development for supervisory roles.

There is an increasing demand for properly trained officers in municipal, county, state and federal agencies, and in law enforcement services. Also, individuals in this curriculum receive training for employment in allied health fields, and social services.

Working with delinquent juveniles using behavior modification techniques and other techniques is a typical assignment for the corrections and juvenile delinquency graduate. Employment may also be found in allied health, mental health, rehabilitation and social services.

Job Opportunities: Adult Probation and Parole, Court Intake Officer; Group and Community Organization Worker; Rehabilitation Officer; Training School House Parent; Correctional Officer; Sheriff Departments; and Law Enforcement Agencies.

The Associate in Applied Science Degree—Correctional Services will be awarded by the College upon completion of this program.

For more information or answers to questions, call the Program director, 342-6652, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES:		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
CSC	3300 Corrections—Policies and Procedures	3	0	0	3
CSC	3301 Drugs, Society and Crime	3	0	0	3
CSC	3302 Court Intake Officer	3	0	0	3
CSC	3303 Supervision for Probation and Parole	3	0	0	3
CSC	3500 Intro. to Corrections	5	0	0	5
CSC	3501 Correctional Psychology	5	0	0	5
CSC	3504 Juvenile Justice System	5	0	0	5
CSC	3507 Criminal Personality and Behavior	5	0	0	5
CSC	3510 Women in the Criminal Justice System	5	0	0	5
CSC	3524 Probation and Parole	5	0	0	5
CSC	4505 Corrections/Rights and Sanctions	5	0	0	5
CSC	4514 Corrections: Community-Based Programs	5	0	0	5
PSC	3510 Criminal Law	5	0	0	5
		57	0	0	57

RELATED COURSES:					
HSA	3421 Helping and Behavioral Stress	4	0	0	4
†HSA	3604 Helping Relationship—Technique	3	0	9	6
SEC	3404 Typing I	3	2	0	4
HED	1204 Standard First Aid	1	2	0	2
		11	4	9	16
*COM	1304 Intro. to Communications	3	0	0	3
*COM	1305 English Composition II *or*				
*COM	3305 Communications II	3	0	0	3
*COM	1306 English Composition III *or*				
*COM	3306 Communications III	3	0	0	3
PSY	2504 General Psychology	5	0	0	5
SPH	1300 Oral Communications	3	0	0	3
Elective—Gen. Education		5	0	0	5
		22	0	0	22

Electives (to be approved by program director) 10

Total Credit Hours 105

*Prerequisite or corequisite required; check course description.
†HSA 3604 is a clinical internship course which will be taken by students who have completed at least 50 credit hours in the Correctional Services Program.

Note: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Data Entry Operations (V129)

The Data Entry Operations curriculum is designed to prepare students for employment in the field of data preparation and entry. Through study of data descriptions and formats, interpretation of source documents, and experience in using data entry devices, they will develop the knowledge and skills for employment as data entry operators.

A Certificate will be awarded by the College upon completion of this program.

For more information or answers to questions, call the Computer Science Division office, 342-6549, weekdays, 8 am to 5 pm.

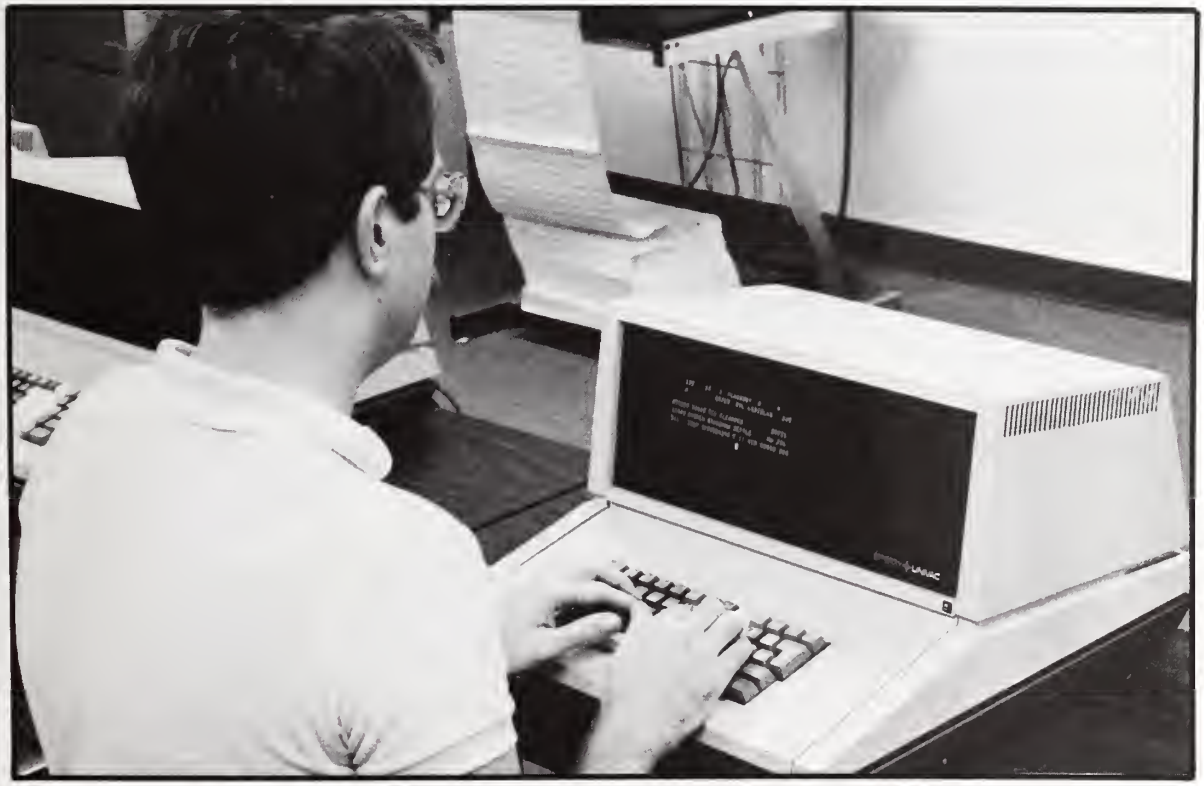
The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
‡EDP 5901 Data Entry I	4	15	9
†Technical Electives			5
FIN 3314 Business Mathematics I	3	0	3
			17
SECOND QUARTER			
‡*EDP 5902 Data Entry II	4	15	9
SEC 3304 Office Machines	2	2	3
COM5500 Communication Skills	5	0	5
			17
Total Credit Hours			34

*Prerequisite or corequisite required; check course description.

†Recommended Technical Electives:
EDP 1500 Computer Literacy
EDP 3310 Microcomputer Operations
EDP 5201 CRT Use in Business Applications

‡Evening students should take EDP 5601 Data Entry I-A, EDP 5602 Data Entry I-B and II-A, and EDP 5603 Data Entry II-B, instead of EDP 5901 Data Entry I and EDP 5902 Data Entry II.



Dental Assisting (V011)

The Dental Assisting curriculum prepares graduates to assist the dentist in providing treatment services. Functions performed by the dental assistant include dental health teaching, preparing dental materials to be used, preparing the patient, taking dental x-rays, caring for dental supplies and equipment, passing instruments and materials to the dentist, making appointments, maintaining patient records, and other office management procedures. Graduates may practice in dental settings such as dentists' offices, dental clinics, public health clinics, federal service clinics, dental schools, and state health departments.

This curriculum prepares the graduate for certification as a Certified Dental Assistant by the Certifying Board of the Dental Assisting Board, Incorporated.

Individuals desiring a career in dental assisting should, if possible, take biology, mathematics, and typing courses prior to entering the program.

A Diploma in Dental Assisting will be awarded by the College upon completion of this program.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIRST QUARTER					
*DEA 5400	Anatomy for Dental Auxiliaries	4	0	0	4
*DEA 5201	Microbiology for Dental Auxiliaries	2	0	0	2
*DEA 5700	Dental Materials	3	8	0	7
*DEA 5502	Introduction to Dental Assisting	2	6	0	5
*COM 1304	Introd. to Communications	3	0	0	3
					21
SECOND QUARTER					
*DEA 5514	Radiology	2	6	0	5
*DEA 5724	Clinical Procedures I	2	6	6	7
*DEA 5301	Office Emergencies and Pharmacology	3	0	0	3
*DEA 5303	Oral Health Education	2	0	3	2
HSA 5200	Human Relations	2	0	0	2
					19

		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
THIRD QUARTER					
*DEA 5202	Oral Pathology	2	0	0	2
*DEA 5543	Dental Office Practice I	0	0	15	5
*DEA 5425	Clinical Procedures II	3	2	0	4
*DEA 5334	Dental Office Management	3	0	0	3
SPH 1300	Oral Communications	3	0	0	3
					17
FOURTH QUARTER					
*DEA 5104	Seminar	1	0	0	1
*DEA 5546	Dental Office Practice IIA	0	0	15	5
*DEA 5545	Dental Office Practice IIB	0	0	15	5
EDP 3310	Microcomputer Operations	3	0	0	3
					14

Total Credit Hours 72

*Prerequisite or corequisite required; check course description.

Dental Hygiene (T054)

The Dental Hygiene curriculum prepares graduates to take patient histories, teach oral hygiene, clean teeth, take X-rays and apply preventive agents under the supervision of a dentist. Dental hygienists may be employed in dentists' offices, clinics, schools, public health agencies, industry and educational institutions.

Graduates are eligible to take the Dental Hygiene National Board written examination, which is administered by the National Board of Dental Examiners; and the State Board Clinical Examination, which is administered by the North Carolina Board of Dental Examiners. A passing grade on both examinations is required for practice as a Registered Dental Hygienist in North Carolina.

Individuals desiring a career in dental hygiene should take biology, algebra and chemistry courses prior to entering the program. Admission is based upon specific test scores, personal interviews, academic performance and skills evaluation. Placement tests required are English, algebra and reading. All students are required to take a certified first aid course before graduation. Advancement studies courses may be required before admission to the program for some students.

An Associate in Applied Science Degree—Dental Hygiene will be awarded by the College upon completion of this program. This program at CPCC is accredited by the Commission on Dental Accreditation of the American Dental Association.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CLN /WK	HRS CR/ QTR
FIRST QUARTER					
*DEN 3401	Dental Anatomy	3	2	0	4
*DEN 3411	Preclinical Dental Hygiene I	2	4	0	4
BIO 1504	Anatomy and Physiology I	3	4	0	5
CHM 1503	Chemistry for Dental Hygiene	3	4	0	5
					18
SECOND QUARTER					
*DEN 3202	Head and Neck Anatomy	2	0	0	2
*DEN 3512	Preclinical Dental Hygiene II	2	6	0	5
DEN 3402	Oral Embryology and Histology	3	0	0	3
*BIO 1505	Anatomy and Physiology II	3	4	0	5
*COM 1304	Intro. to Communications	3	0	0	3
					18
THIRD QUARTER					
*DEN 3513	Clinical Dental Hygiene I	2	0	9	5
*DEN 3503	Dental Radiology	3	4	0	5
*DEN 3203	Dental Emergencies	2	0	0	2
DEN 3223	Dental Health Education	1	2	0	2
BIO 1503	Microbiology	3	4	0	5
					19
FOURTH QUARTER					
*COM 1305	English Composition II	3	0	0	3
SOC 2514	Introduction to Sociology	5	0	0	5
SPH 1300	Oral Communications	3	0	0	3
PSY 2504	General Psychology	5	0	0	5
					16

		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIFTH QUARTER					
*DEN 4305	Periodontology	3	0	0	3
*DEN 4715	Clinical Dental Hygiene II	2	0	15	7
*DEN 4505	Dental Materials	3	4	0	5
BIO 2305	Nutrition	3	0	0	3
					18
SIXTH QUARTER					
*DEN 4616	Clinical Dental Hygiene III	1	0	15	6
*DEN 4406	Community Dental Health I	3	2	0	4
*DEN 4306	Pathology	3	0	0	3
*DEN 4206	Chairside Assisting	1	2	0	2
*DEN 4226	Pharmacology	2	0	0	2
					17
SEVENTH QUARTER					
*DEN 4617	Clinical Dental Hygiene IV	1	0	15	6
*DEN 4207	Community Dental Health II	1	0	3	2
DEN 4407	Dental Hygiene Practice	3	0	3	4
*COM 1306	English Composition III	3	0	0	3
					15

Total Credit Hours 121

*Prerequisite or corequisite required; check course description.

Diesel Vehicle Maintenance (V013)

The Diesel Vehicle Maintenance curriculum provides a program for developing the basic knowledge and skills needed in diesel vehicle maintenance. Manual skills are developed in practical shop work.

Diesel engines are found in farm and construction equipment, electric generators, trucks, buses, trains, automobiles and ships. Many diesel mechanics specialize in maintenance and repair of equipment; others specialize in rebuilding engines.

Diesel vehicle mechanics are instructed through class assignments, discussion and shop practice to maintain and repair engines, chassis and suspensions, and power trains used to power farm equipment, construction equipment, buses and trucks. They use hand tools, precision measuring and testing instruments, and power tools in overhauling and maintaining diesel powered equipment.

A Diploma in Diesel Vehicle Maintenance will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director at (704) 342-6782 or 342-6930, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER					
AUT	5401	Internal Combustion Engines I	2	6	4
AUT	5415	Electrical Systems I	2	6	4
DSL	5300	Diesel Fundamentals	2	3	3
DSL	5304	Hydraulics and Pneumatics	2	2	3
AUT	5403	Basic Calculations for Auto, Diesel and Power Mechanics	4	0	4
					18
SECOND QUARTER					
AUT	5212	Electrical Testing	I	3	2
DSL	5314	Diesel Engines I	1	6	3
DSL	5315	Diesel Engines II	1	6	3
DSL	5319	Fuel Injection Systems I	2	3	3
EDP	3310	Microcomputer Operations	2	2	3
PHY	5304	Shop Science I	2	2	3
WLD	5210	Basic Oxyacetylene Welding	I	3	2
					19
THIRD QUARTER					
AUT	5254	Automotive Heating and Air Conditioning	I	3	2
DSL	5316	Diesel Engines III	1	6	3
DSL	5317	Diesel Engines IV	1	6	3
DSL	5320	Fuel Injection Systems II	2	3	3
HSA	5200	Human Relations	2	0	2
PHY	5305	Shop Science II	2	2	3
WLD	5220	Basic Electric Arc Welding	1	3	2
					18
FOURTH QUARTER					
AUT	5425	Auto Power Train Systems I	2	6	4
COM	5500	Communication Skills	5	0	5
DSL	5308	Air Brakes	2	2	3
DSL	5318	Diesel Tune-Up and Troubleshooting	2	3	3
†Elective			—	—	4
					19
Total Credit Hours					74

†RECOMMENDED ELECTIVES:

AUB	5200	Basic Auto Body Repair	1	3	2
AUB	5202	Auto Renewal	I	3	2
AUB	5214	Door and Fender Alignment	1	3	2
AUT	5404	Auto Chassis and Suspension Systems	2	6	4
DSL	4400	Automotive Diesel Engines	2	6	4
DSL	5400	Heavy Duty Transmission Repair	2	6	4
MAC	5201	Machine Shop Practices	1	3	2
MGT	5200	Shop Management	2	0	2
PME	5211	Small Engine Repair	1	3	2
WLD	5250	Basic Gas Metal Arc Welding	1	3	2

Electrical Engineering Technology (T044)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

This curriculum is designed to train technicians for jobs in the areas of research, design, development, production, maintenance and sale of electrical and power generation equipment.

The electrical engineering technician may work as a laboratory technician or as an engineering aide in research, design or development in direct support of an engineer, or as a liaison between the engineer and the skilled craftsperson. The graduate may accept a position in maintenance or sales work requiring a strong background in electrical equipment design and operation.

Electrical Engineering Technology involves the practical application of electrical and electronic fundamentals in the design, fabrication/installation, testing, repair and maintenance of electrical components, circuits and systems. The electrical engineering technician is concerned with electrical systems, industrial controls, power electronics, analog and digital circuitry, and the application of microcomputers in electrical systems.

The Electrical Engineering Technology program provides a basic background in the practical application of both fundamental and specialized electrical and electronic principles. Courses are designed to present technical content in an order that provides students with progressive levels of job-related knowledge and skills. From fundamental electrical and electronic courses, students advance to electrical specialty courses that provide concentrated study in various fields of the electrical industry, including: industrial controls, planning electrical installations, power electronics, electrical machines and programmable logic controls, and automated manufacturing/robotics.

Graduates may also continue for two or more years at a senior institution offering a Bachelor of Engineering Technology (BET) program.

The Computer/Electrical/Electronics Engineering Technology laboratories at CPCC are staffed during day and evening hours so that students may devote as much time as possible to laboratory assignments. These modern facilities include adequate equipment to support practical laboratory activity in all courses from basic electricity to computer-electronics, programmable logic controllers, electrical machines and robotics.

The Associate in Applied Science Degree—Electrical Engineering Technology will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program counselor at (704) 342-6881, the Computer/Electrical/Electronics Program director at (704) 342-6479, or Technology Division head at (704) 342-6557, weekdays, 8 am to 5 pm.

The first step to enroll: call the CPCC Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
ELN 3100	Electrical/Electronics Seminar	1	0	1
*ELN 3514	Basic Electricity (DC)	3	6	5
EDP 3405	Microcomputer Programming—BASIC	3	2	4
*MAT 3507	Engineering Technology Math I	5	0	5
*COM 1304	Introduction to Communications	3	0	3
				18
SECOND QUARTER				
*ELN 3515	Basic Electricity (AC)	3	6	5
DFT 3400	Electrical/Electronics Drafting	2	6	4
*MAT 3508	Engineering Technology Math II	5	0	5
*COM 3305	Communications II	3	0	3
				17
THIRD QUARTER				
*ELN 3404	Electronics I: Active Devices	3	3	4
*ELN 4444	Network Analysis	3	3	4
*MAT 3509	Engineering Technology Math III	5	0	5
*COM 3306	Communications III	3	0	3
†General Education Elective		3	0	3
				19
FOURTH QUARTER				
*ELN 3405	Electronics II: Analog Circuits	3	3	4
*ELN 4427	Digital Circuits I	3	3	4
*ELN 4525	Electrical Machines I	3	6	5
*PHY 1404	Physics I: Basic Mechanics	3	2	4
				17
FIFTH QUARTER				
*ELN 3406	Electronics III: Op-Amps	3	3	4
*ELN 4401	Planning Electrical Installations	3	3	4
*ELN 4526	Electrical Machines II	3	6	5
*PHY 1405	Physics II: Electrical and Thermal Properties of Matter	3	2	4
				17
SIXTH QUARTER				
*ELN 4100	Senior Seminar	1	0	1
*ELN 4326	Electrical/Electronics Project	1	6	3
*ELN 4415	Industrial Programmable Controllers	3	3	4
SPH 1300	Oral Communications	3	0	3
†ELN	Technical Elective			3
†General Education Elective		3	0	3
				17

*Prerequisite or corequisite required; check course description.

(Continued)

SEVENTH QUARTER

*ELN 4505 Power Electronics	3	6	5
*ELN 4436 Systems Correction Procedure	3	3	4
†ELN Technical Elective			3
*PHY 1407 Physics IV: Modern Physics	3	2	4
			16

Total Credit Hours 121

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

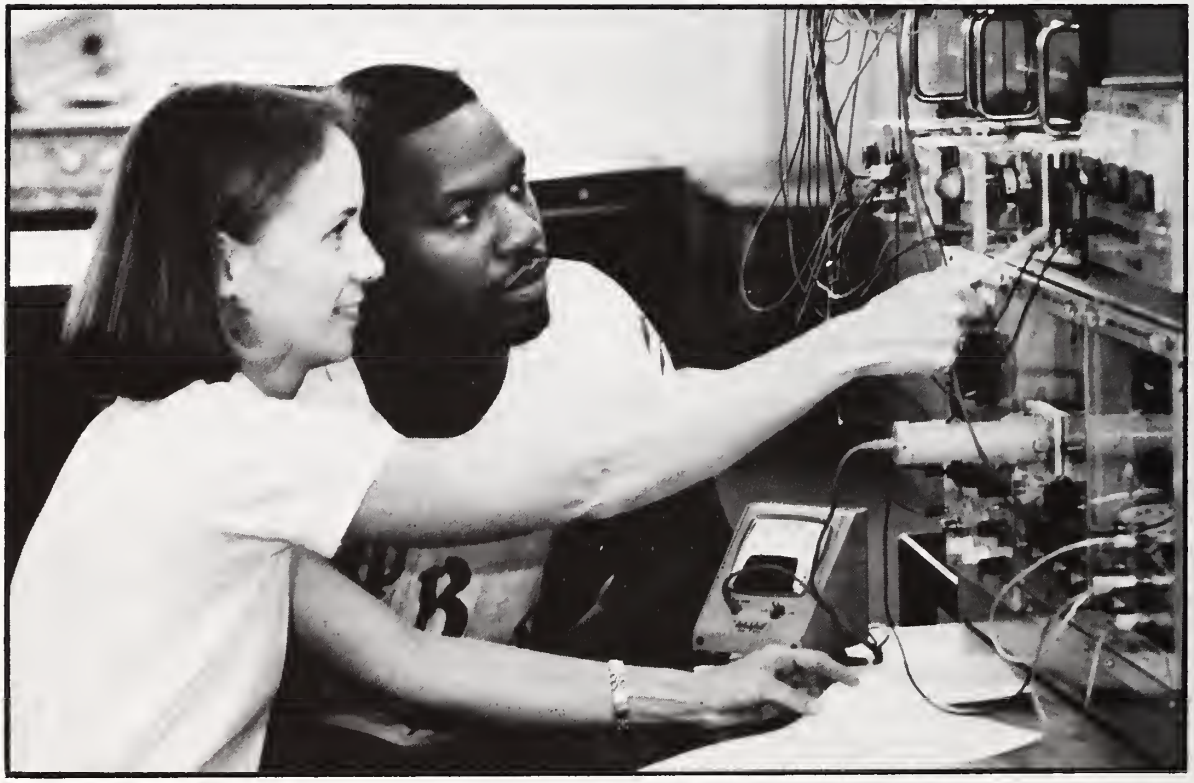
Technical Electives—

ELN 3414 Industrial Instrumentation
ELN 4284 Cooperative Work Experience
ELN 4327 Microcomputer Applications Project
ELN 4345 Advanced Electrical/Electronics Project
ELN 4404 Medical Electronics
ELN 4414 Receivers and Transmitters
ELN 4416 Computer Maintenance I
ELN 4434 Digital Circuits II
ELN 4437 Microcomputer Applications in Robotics
ELN 4454 Computer & Data Communications I
ELN 4455 Computer & Data Communications II
ELN 4464 Printed Circuit Board Design & Layout (CAD) I
ELN 4465 Printed Circuit Board Design & Layout (CAD) II
ELN 4547 Microprocessors I
ELN 4557 Microprocessors II
ELN 4567 Microcomputer System Design
MAT 4507 Engineering Technology Math IV

General Education Electives—

Courses must come from the areas of communications, social science, or humanities.

Electrical Engineering Technology is a TAC/ABET accredited program at CPCC.



Electrical Installation and Maintenance (V018)

The Electrical Installation and Maintenance curriculum is designed to provide a training program in the basic knowledge, fundamentals and practices involved in the electrical trades. A large segment of the program is laboratory and shop instruction designed to give students practical knowledge and application experience in the fundamentals taught in class.

The graduate of this curriculum is qualified to enter an electrical trade as an on-the-job trainee or apprentice, assisting in the layout, installation, check-out and maintenance of systems in residential, commercial or industrial settings.

A Diploma in Electrical Installation and Maintenance will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director at (704) 342-6672 or (704) 342-6930, weekdays, 9 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER					
ELC	5901	Direct and Alternating Current	5	12	9
ELC	5401	Basic Calculations for Electricians	4	0	4
PHY	5304	Shop Science I	2	2	3
HSA	5200	Human Relations	2	0	2
					18
SECOND QUARTER					
ELC	5803	Residential Wiring	5	9	8
COM	5500	Communication Skills	5	0	5
ELC	5200	Electrical and Building Trades Blueprint Reading	1	2	2
AHR	5314	Automatic Controls	2	3	3
WLD	5220	Basic Electric Arc Welding	1	3	2
					20
THIRD QUARTER					
ELC	5802	Alternating Current and Direct Current Machines and Controls	4	12	8
*ELC	5510	Industrial Electronics I	3	6	5
ELC	5310	Electrical Schematics	2	3	3
AHR	5204	Wiring Diagrams and Trouble-shooting for A/C Systems	1	3	2
					18
FOURTH QUARTER					
ELC	5904	Commercial & Industrial Wiring	5	12	9
*ELC	5520	Industrial Electronics II	3	6	5
ELC	5405	Basic Control Systems	2	6	4
					18

Total Credit Hours 74

*Prerequisite required; check course description.

Electronics Engineering Technology (T045)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The Electronics curriculum provides a basic background in electronic related theory, with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may work as assistants to engineers or as liaisons between engineers and skilled craftspersons.

The electronic technician will start in one or more of the following areas: research, design, development, production, maintenance or sales. The graduate may begin as an electronics technician, an engineering aide, laboratory technician, supervisor or equipment specialist.

Electronics Engineering Technology involves the practical application of electrical and electronic fundamentals of design, fabrication, manufacturing, testing, repair and maintenance of electronic components, circuits, and systems. The electronics engineering technician is concerned with analog and digital circuitry, microprocessors, microcomputers, and their practical application in modern industrial applications.

The Electronics Engineering Technology Program provides a basic background in the practical application of both fundamental and specialized electronic principles. Courses are designed to present technical content in an order that provides students with progressive levels of job-related knowledge and skills. From fundamental electrical and electronic courses, students advance to electronic specialty courses that provide concentrated study in various fields of the electronic industry, including computer-electronics, microprocessors, systems maintenance, data communication, robotics, and printed circuit board layout and design using CAD.

Graduates may also continue study for two or more years at a senior institution offering Bachelor of Engineering (BET) programs.

The Computer/Electrical/Electronics Engineering Technology laboratories at CPCC are staffed during day and evening hours in order that students may devote as much time as possible to laboratory assignments. These modern facilities include state-of-the-art equipment to support practical laboratory activity in all courses from basic electricity to computer-electronics and robotics.

The Associate in Applied Science Degree—Electronics Engineering Technology will be awarded by the College upon completion of this program.

For more information contact the program counselor at (704) 342-6881, the Computer/Electrical/Electronics Program director at (704) 342-6479, or the Technology Division head at (704) 342-6557, weekdays, 8 am to 5 pm.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
ELN 3100	Electrical/Electronics Seminar	1	0	1
*ELN 3514	Basic Electricity (DC)	3	6	5
EDP 3405	Microcomputer Programming—BASIC	3	2	4
*MAT 3507	Engineering Technology Math I	5	0	5
*COM 1304	Introduction to Communications	3	0	3
				18
SECOND QUARTER				
*ELN 3515	Basic Electricity (AC)	3	6	5
DFT 3400	Electrical/Electronics Drafting	2	6	4
*MAT 3508	Engineering Technology Math II	5	0	5
*COM 3305	Communications II	3	0	3
				17
THIRD QUARTER				
*ELN 3404	Electronics I: Active Devices	3	3	4
*ELN 4444	Network Analysis	3	3	4
*MAT 3509	Engineering Technology Math III	5	0	5
*COM 3306	Communications III	3	0	3
†General Education Elective		3	0	3
				19
FOURTH QUARTER				
*ELN 3405	Electronics II: Analog Circuits	3	3	4
*ELN 4427	Digital Circuits I	3	3	4
*ELN 4525	Electrical Machines I	3	6	5
*PHY 1404	Physics I: Basic Mechanics	3	2	4
				17
FIFTH QUARTER				
*ELN 3406	Electronics III: Op-Amps	3	3	4
*ELN 4434	Digital Circuits II	3	3	4
*ELN 4547	Microprocessors I	3	6	5
*PHY 1405	Physics II: Elastic and Thermal Properties of Matter	3	2	4
				17
SIXTH QUARTER				
*ELN 4100	Senior Seminar	1	0	1
*ELN 4326	Electrical/Electronics Project	1	6	3
*ELN 4464	Printed Circuit Board Design and Layout (CAD) I	3	3	4
†ELN	Technical Elective			4
SPH 1300	Oral Communications	3	0	3
†General Education Elective		3	0	3
				18

*Prerequisite or corequisite required; check course description.

(Continued)

SEVENTH QUARTER

*ELN 4307 Systems Correction Procedure	3	3	4
†ELN Technical Elective			4
cELN Technical Elective			3
*PHY 1407 Physics IV: Modern Physics	3	2	4
			15

Total Credit Hours 121

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

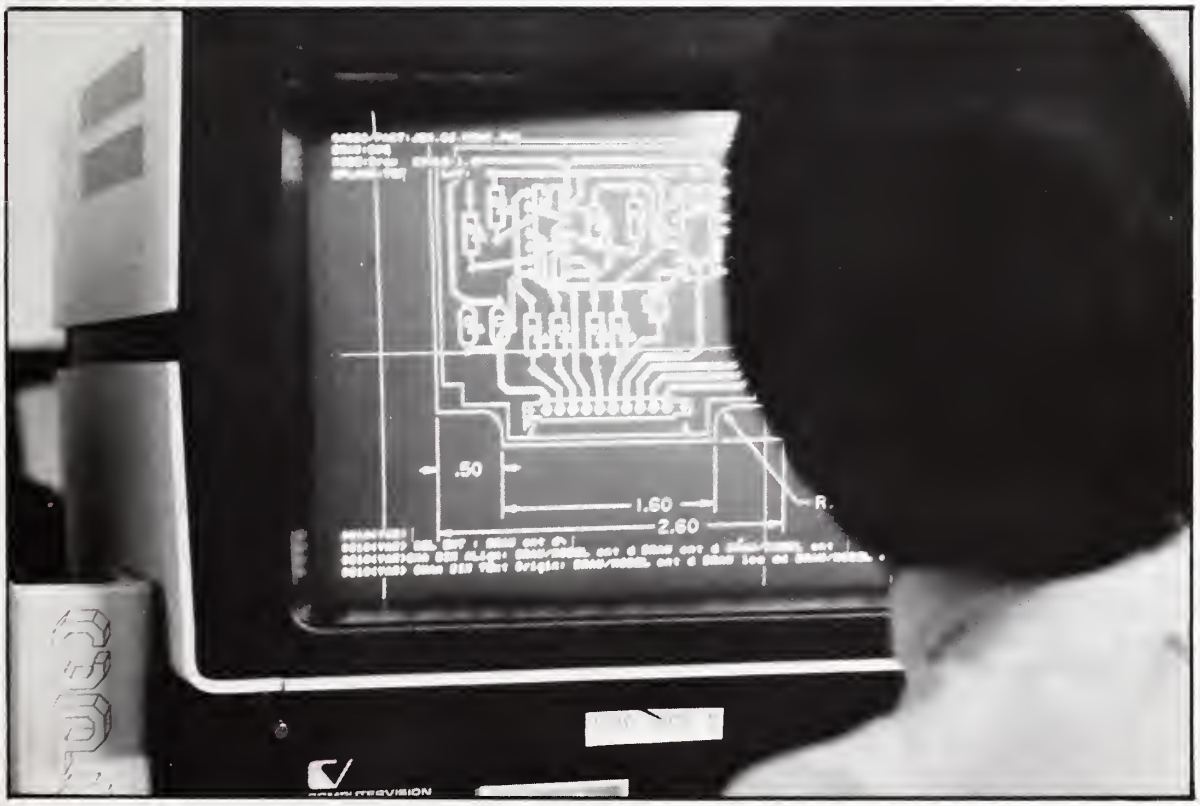
Technical Electives—

ELN 3414 Industrial Instrumentation
ELN 4284 Cooperative Work Experience
ELN 4327 Microcomputer Applications Project
ELN 4345 Advanced Electrical/Electronics Topics
ELN 4401 Planning Electrical Installations
ELN 4404 Medical Electronics
ELN 4414 Receivers and Transmitters
ELN 4415 Industrial Programmable Controllers
ELN 4416 Computer Maintenance I
ELN 4437 Microcomputer Applications in Robotics
ELN 4454 Data & Computer Communications I
ELN 4455 Data & Computer Communications II
ELN 4465 Printed Circuit Board Design & Layout (CAD) I
ELN 4505 Power Electronics
ELN 4526 Electrical Machines II
ELN 4557 Microprocessors II
ELN 4567 Microcomputer System Design
MAT 4507 Engineering Technology Math IV

General Education Electives—

Courses must come from the areas of communication, social science, or humanities.

Electronics Engineering Technology is a TAC/ABET accredited program.



Fire Protection Technology (T063)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The Fire Protection Technology curriculum is designed to enable individuals to draw on technical and professional knowledge in making effective decisions concerning fire protection. Through technical education, the individual acquires specialized knowledge in this field of public service and develops specific competencies for the performance of fire service admininstrative and supervisory duties. The curriculum includes areas such as the scientific understanding of fire hazards and their control and general courses that prepare one to work with people harmoniously.

Opportunities are excellent for the individual with adequate training and ability. Students seeking employment may be hired by governmental agencies, industrial firms, educational organizations and insurance rating organizations. Employed persons should have opportunities for positions requiring increased skill and responsibility as they increase their job competence.

The Associate in Applied Science Degree—Fire Protection Technology will be awarded by the College upon completion of this program. Fire Protection Technology is under the Human Services Department. Students may obtain a suggested course sequence list from the program counselor or program director.

For more information or answers to questions, call the program counselor or the program director, weekdays, 8 a.m. to 5 p.m.: 342-6419, Counselor, Human Services Department; 342-6705, Program Director, Fire Protection Technology.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES	HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIP 3303 Fire Protection I	3	0	0	3
*FIP 3404 Chemistry of Flammable Materials	3	2	0	4
FIP 4304 Fire Protection Law	3	0	0	3
*FIP 4434 Chemical and Radiation Hazards	3	2	0	4
FIP 3304 Fire Management	3	0	0	3
FIP 4444 Fire Fighting Strategy	3	2	0	4
*FIP 3405 Flame Propagation and Material Rating	2	4	0	4
*FIP 4464 Hazardous Material Analysis and Emergency Planning	2	4	0	4
FIP 3301 Fire Prevention Programs and Public Relations	2	2	0	3
FIP 4454 Building Construction	3	2	0	4
FIP 4414 Inspection Principles and Building Codes	3	0	3	4
FIP 4423 Portable and Fixed Extinguishing Systems	3	2	0	4
FIP 3401 Plant Emergency Operations	3	2	0	4
FIP 3406 Arson Investigation I	3	2	0	4
*FIP 4403 Hydraulics for Fire Protection	3	2	0	4
FIP 4424 Automatic Alarm Systems	3	2	0	4
*FIP 3408 Arson Investigation II	3	2	0	4
*FIP 4404 Water Distribution Systems	3	2	0	4
FIP 4405 Sprinkler and Standpipe Systems	3	2	0	4
FIP 4314 Methods of Teaching	3	0	0	3
				75

RELATED COURSES	HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
*CEM 3300 Fire Protection Chemistry	3	0	0	3
MAT 3500 Mathematics for Fire Protection	5	0	0	5
ARC 3334 Architectural Drafting I (Basic)	1	6	0	3
EDP 3310 Microcomputer Operations	2	2	0	3
A combination of 15 credit hours chosen from General Studies or Career Education				15
				29
GENERAL EDUCATION:				
*COM 1304 Communications I	3	0	0	3
*COM 3305 Communications II	3	0	0	3
*COM 3306 Communications III	3	0	0	3
HSA 3421 Helping and Behavioral Stress	4	0	0	4
5 Credit Hours in Humanities/ Social Science				5
				18

Total Credit Hours 122

*Prerequisite or corequisite required; check course description.

Food Service Management (T074)

Chef Training

Students should consult with a faculty adviser or program counselor regarding transferability of this program to a senior institution.

The Food Service Management curriculum trains students at the supervisory or "middle management" level in food service with particular emphasis on institutional food service. Students completing the first year of this curriculum and desiring additional study in supervision and management may continue for the second year or exit after the fourth quarter with a diploma as a Food Service Specialist.

In addition to having a sound foundation in the science of food preparation and service, students will develop an understanding of the basic science and principles of quantity food preparation, an appreciation of accuracy and the use of standards in production, an increased knowledge of the space and equipment requirements for quantity food production and service operations of various types, and some ability to evaluate the effectiveness of the operation of a food service department. Also, students will understand pricing and cost controls, principles of nutrition as applied to institutional menu planning, safe methods of work performance and appreciation of sanitation and hygiene in a food service operation.

The career opportunities available to a graduate of the Food Service Management curriculum are dietetic assistant, food science supervisor, food service manager, dietary technician, unit manager and chef-manager. Employment opportunities are available in hospitals, nursing homes, child care centers, colleges and university food services, food processing manufacturers, food service contract companies and commercial restaurants.

The Associate in Applied Science Degree—Food Service Management will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6721, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CoOp /WK	HRS CR/ QTR
ACC	3500	Small Business Accounting	5	0	0	5
BUS	1400	Introduction to Business	3	2	0	4
BUS	3300	Human Relations	3	0	0	3
*COM	1304	Introd. to Communications	3	0	0	3
*COM	3305	Communications II	3	0	0	3
*COM	3306	Communications III	3	0	0	3
EDP	1500	Computer Literacy	5	0	0	5
ECO	3300	Introduction to Economics	3	0	0	3
†FIN	3314	Business Mathematics I	3	0	0	3
*FIN	3315	Business Mathematics II	3	0	0	3
FSO	3300	Introduction to Food Service Management	3	0	0	3
FSO	3301	Nutrition	3	0	0	3
FSO	3305	Table Cookery	2	3	0	3
FSO	3504	Food Preparation I	2	9	0	5
FSO	3505	Food Preparation II	2	9	0	5
FSO	3506	Food Preparation III	2	9	0	5
FSO	4208	Cooperative Education	0	0	20	2
FSO	4304	Food and Labor Cost Controls	3	0	0	3
FSO	4407	Baking I	2	6	0	4
FSO	4408	Baking II	2	6	0	4
FSO	4409	Baking III	2	6	0	4
FSO	4414	Garde Manger I	2	6	0	4
FSO	4415	Garde Manger II	2	6	0	4
FSO	4416	Garde Manger III	2	6	0	4
FSO	4419	Baking IV	2	6	0	4
FSO	4426	Garde Manger IV	2	6	0	4
FSO	4506	Food Preparation IV	2	9	0	5
MGT	3303	Small Business Management	3	0	0	3
MGT	4330	Supervision	3	0	0	3
SPH	1300	Oral Communications	3	0	0	3
Electives			3	0	0	3
Total Credit Hours						113

*Prerequisite or corequisite required; check course description.

†MAT 1504, MAT 1505 or MAT 1514, MAT 1515 may be taken if student has met requirements.

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Food Service Specialist (V053)

Chef Training

Students should consult with a faculty adviser or program counselor regarding transferability of this program to a senior institution.

The Food Service Specialist curriculum trains students in the art and science of quantity food preparation with particular emphasis on institutional food service. Using a career ladder concept, it is an open-ended curriculum allowing students more flexibility in their training. In addition to development of knowledge and skills in the art and science of food preparation, the student must develop an understanding and appreciation of food and equipment purchasing, financial control, record keeping, basic nutrition and menu planning and supervision.

A graduate of this curriculum should be qualified for entry into positions as assistant cook, short order cook, cook, chef's assistant, cook manager, baker, assistant baker, and pastry cook. Employment needs for graduates of this program are found in hospitals, nursing homes, child care centers, college and university food services, school food services, industrial cafeterias, private clubs, airline food services, food processing manufacturers, food service contract companies and commercial restaurants.

A Certificate will be awarded by the College upon completion of this program. The Certificate may be credited toward the Associate in Applied Science—Food Service Management degree.

For more information or answers to questions, call the program director, (704) 342-6721, weekdays, 8 am to 5 pm.

The first step to enroll: Call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
BUS	1400	Introduction to Business	3	2	4
BUS	3300	Human Relations	3	0	3
*COM	1304	Introd. to Communications	3	0	3
*COM	3305	Communications II	3	0	3
†FIN	3314	Business Mathematics I	3	0	3
*FIN	3315	Business Mathematics II	3	0	3
FSO	3300	Introduction to Food Service Management	3	0	3
FSO	3504	Food Preparation I	2	9	5
FSO	3505	Food Preparation II	2	9	5
FSO	3506	Food Preparation III	2	9	5
FSO	4407	Baking I	2	6	4
FSO	4408	Baking II	2	6	4
FSO	4409	Baking III	2	6	4
FSO	4414	Garde Manger I	2	6	4
FSO	4415	Garde Manger II	2	6	4
FSO	4416	Garde Manger III	2	6	4
FSO	4419	Baking IV	2	6	4
FSO	4426	Garde Manger IV	2	6	4
FSO	4506	Food Preparation IV	2	9	5
Total Credit Hours					74

*Prerequisite or corequisite required; check course description.
†MAT 1504, MAT 1505 or MAT 1514, MAT 1515 may be taken if student has met requirements.
NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

General Office (T033)

The purposes of the General Office curriculum are to: (1) prepare the individual to enter clerical-office occupations, (2) provide an educational program for individuals wanting education for upgrading (moving from one position to another) or retraining (moving from present position to a clerical position), and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of typewriting, filing, and business machines. Through these skills and through development of personal competencies and qualities, the individual will be able to function effectively in office-related activities.

The Associate in Applied Science Degree—General Office will be awarded by the College upon completion of this program.

Credit by examination for all SEC courses can be arranged by contacting the department head. A suggested sequence of required courses for full-time students is listed below. (Course sequence sheets for part-time and evening students are available from the department head or in the Secretarial lab.) For more information or answers to questions, call 342-6781 weekdays, 8 a.m. to 5 p.m. or 342-6889 after 5 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
SEC 3305 Editing, Proofreading, and Reference Skills	3	0	3
SEC 3404 Typing I	3	2	4
FIN 3314 Business Mathematics I	3	0	3
BUS 1400 Introduction to Business	3	2	4
SEC 3320 Personal Projection	3	0	3
			17
SECOND QUARTER			
*COM 3515 Advanced Grammar	5	0	5
*SEC 3405 Typing II	3	2	4
*FIN 3315 Business Mathematics II	3	0	3
EDP 3310 Microcomputer Operations	2	2	3
SEC 3311 Receptionist Skills	3	0	3
			18
THIRD QUARTER			
SEC 3302 Effective Word Techniques	3	0	3
*SEC 3406 Typing III	3	2	4
*SEC 3304 Office Machines	2	2	3
SEC 4370 Records Management	3	0	3
†General Education Electives	4	0	4
			17
FOURTH QUARTER			
*COM 1304 Intro. to Communications	3	0	3
*SEC 4407 Typing IV	3	2	4
*SEC 4426 Word Processing I	3	2	4
BUS 2304 Business Law I	3	0	3
†Major Electives	4	0	4
			18
FIFTH QUARTER			
*COM 3305 Communications II	3	0	3
*SEC 4305 Business Communications	3	0	3
*SEC 4427 Word Processing II	3	2	4
SPH 1300 Oral Communications	3	0	3
SEC 4201 Secretarial Coop. Experience I *or* †Related Elective	2	0	2
			15
SIXTH QUARTER			
*SEC 4425 Machine Transcription	3	2	4
*SEC 4517 General Office Procedures	5	0	5
ACC 3600 General Accounting *or* ACC 1604 Principles of Accounting I	5	2	6
BUS 3300 Human Relations	3	0	3
			18
Total Credit Hours			103

†**ELECTIVES:**
General Education—COM, SPH, PSY, SOC, ECO, POL, or HIS prefixes.
Major—SEC prefixes.
Related—ACC, BAF, BUS, EDP, FIN, INS, or MGT prefixes.

*Prerequisite or corequisite required; check course description.

(Continued)

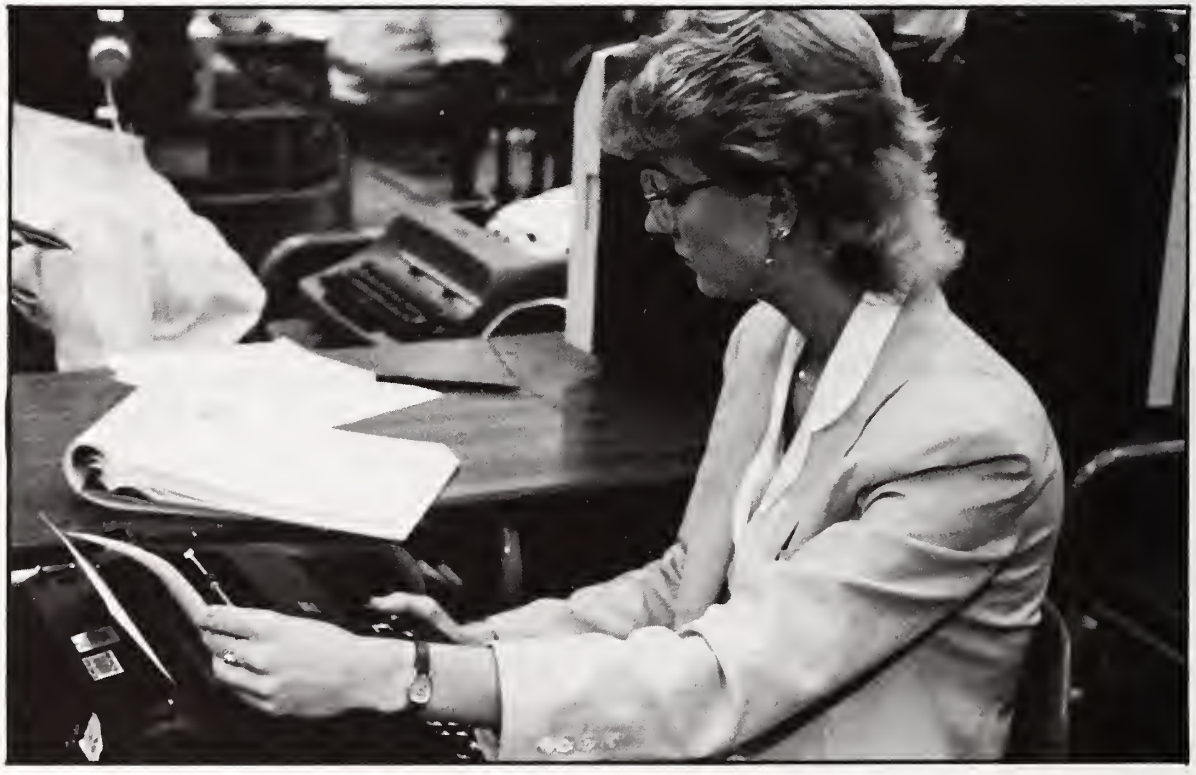
The 3-Plus Plan

The following courses can be taken in three quarters. These courses are designed for individuals entering, upgrading or retraining for the comprehensive office technology required in today's business world. If a student later decides to do so, the remaining courses in General Office Technology will complete the requirements for the Associate in Applied Science degree.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
SEC 3404	Typing I	3	2	4
SEC 3305	Editing, Proofreading and Reference Skills	3	0	3
SEC 3302	Effective Word Techniques	3	0	3
FIN 3314	Business Mathematics I	3	0	3
SEC 3320	Personal Projection	3	0	3
				16
SECOND QUARTER				
SEC 3405	Typing II	3	2	4
*COM 3515	Advanced English Grammar	5	0	5
SEC 3304	Office Machines	2	2	3
*ACC 3600	General Accounting	5	2	6
				18
THIRD QUARTER				
*SEC 3406	Typing III	3	2	4
*SEC 4425	Machine Transcription	3	2	4
*SEC 4426	Word Processing I	3	2	4
SEC 4370	Records Management	3	0	3
SEC 3311	Receptionist Skills	3	0	3
				18

Total Credit Hours 52

*Prerequisite or corequisite required; check course description.



Graphic Arts (V022)

This curriculum gives individuals experience with equipment and a working knowledge of methods used in the graphic arts industry. Ample opportunities are provided for students to develop skills in the operation of machines and equipment and to become familiar with a wide range of graphic processes.

There are many distinct occupations in the graphic arts industry. Graduates will be able to set type by various methods, prepare copy and artwork, proofread, operate presses, understand the photomechanical process, operate bindery equipment and perform a variety of other graphic arts skills.

Graphic Arts in the United States is the largest industry in terms of the number of manufacturing plants. Over one million people are employed in this field, turning out an annual volume of printed products valued in the billions of dollars. Recent growth has been slightly faster than that of the Gross National Product. With new technology, many of the machines, methods and processes are changing, so the industry increasingly requires more highly skilled technicians and craftsmen.

A Diploma in Graphic Arts will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, 342-6782, 342-6655 or 342-6930 weekdays 8 a.m. to 5 p.m.

The first step to enroll: Call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
COM 5500	Communication Skills	5	0	5
HSA 5200	Human Relations	2	0	2
PRN 5369	Introduction to Graphic Arts	3	0	3
PRN 5401	Copy Preparation I	2	4	4
SEC 5200	Keyboarding	1	2	2
				16
SECOND QUARTER				
PRN 5310	Paper and Ink	3	0	3
PRN 5314	Process Camera I	2	2	3
PRN 5365	Stripping I and Platemaking	2	2	3
PRN 5402	Basic Calculations for Printers	4	0	4
PRN 5424	Offset Press I and Bindery	2	4	4
				17
THIRD QUARTER				
*PRN 5315	Process Camera II	2	2	3
*PRN 5425	Offset Press II	2	4	4
*PRN 5435	Offset Stripping II	2	4	4
*PRN 5700	Printing Applications I *or*	2	15	7
*PRN 5371	Printing Applications I—Part A	2	3	3
*PRN 5272	Printing Applications I—Part B	0	6	2
*PRN 5273	Printing Applications I—Part C	0	6	2
				18
FOURTH QUARTER				
PRN 5301	Printing Management	3	0	3
PRN 5303	Printing Estimating I	3	0	3
PRN 5313	Typesetting I	2	2	3
*PRN 5409	Color Reproduction	3	2	4
*PRN 5704	Printing Applications II *or*	2	15	7
*PRN 5381	Printing Applications II—Part A	2	3	3
*PRN 5282	Printing Applications II—Part B	0	6	2
*PRN 5283	Printing Applications II—Part C	0	6	2
				20

Total credit hours 71

*Prerequisite or corequisite required; check course description.

Graphic Arts Course Clusters

Graphics Arts Course Clusters provide specific groups of courses leading to graphic arts employment as rapidly as possible. Students select from several course clusters leading to a Certificate of Accomplishment. All course clusters may be transferred to the Diploma or Degree programs. Clusters are one to three quarters and are in:

Typesetting/Copy Preparation—how to mark up and set type on a second-generation typesetter and how to paste up camera-ready copy; ***Duplicator Operation***—how to run single and multicolor jobs on offset duplicators, including stripping, making plates, and basic bindery operation; ***Press Operation***—in addition to those above, students should be able to operate a large offset press; ***Process Camera Operation***—how to shoot line, halftone and special effects photography on the process camera; ***General Print Shop***—how to perform general duties in the job printing shop, from typesetting to bindery operations; ***Color Printing***—students should be able to perform camera, stripping, and basic color separation operations; ***Stripping***—how to perform basic, advanced, and color stripping for both press and duplicator; ***Printing Management and Sales***—how to perform basic skills necessary to supervise a small printing shop or in-plant facility or be a first-line supervisor in a larger shop; ***Screen Printing***—how to perform duties necessary to do production work in various phases of the screen printing industry.

Call the Graphic Arts Department, 342-6782 or 342-6655 for suggested course sequences and more information.

Graphic Arts Management (T026)

The Graphic Arts—Printing Management curriculum prepares students for employment as trainees or assistants to management personnel in printing and related occupations in the graphic arts. This program is designed to provide a broad background of knowledge and a variety of graphic skills leading toward a management position after several years of on-the-job experience in this industry. Instruction will include classroom theory and hands-on experience with composing equipment, graphic camera work, layout and copy preparation, bindery operations, production presswork and customer service experience.

The Associate in Applied Science Degree—Graphic Arts Management will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6782, 342-6655 or 342-6930, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
*COM 1304 Introd. to Communications	3	0	3
HSA 5200 Human Relations	2	0	2
PRN 5369 Introduction to Graphic Arts	3	0	3
PRN 5401 Copy Preparation I	2	4	4
PRN 5402 Basic Calculations for Printers	4	0	4
†Technical Elective	—	—	3
			19
SECOND QUARTER			
*COM 3505 Communications II	3	0	3
PRN 5310 Paper and Ink	3	0	3
PRN 5314 Process Camera I	2	2	3
PRN 5365 Stripping I and Platemaking	2	2	3
PRN 5424 Offset Press I and Bindery	2	4	4
SEC 5200 Keyboarding	1	2	2
			18
THIRD QUARTER			
BUS 1400 Introduction to Business	3	2	4
*COM 3306 Communications III	3	0	3
*PRN 5315 Process Camera II	2	2	3
*PRN 5425 Offset Press II	2	4	4
*PRN 5435 Offset Stripping II	2	4	4
			18
FOURTH QUARTER			
PRN 5301 Printing Management	3	0	3
PRN 5303 Printing Estimating	3	0	3
*PRN 5409 Color Reproduction	3	2	4
PRN 4311 Printing Sales	3	0	3
†General Education Electives	6	0	6
			19
FIFTH QUARTER			
BUS 2304 Business Law I	3	0	3
PRN 4337 Color Separation Techniques and Theory	2	2	3
PRN 5313 Typesetting I	2	2	3
*PRN 5700 Printing Applications I *or*	2	15	7
*PRN 5371 Printing Applications I—Part A	2	3	3
*PRN 5272 Printing Applications I—Part B	0	6	2
*PRN 5273 Printing Applications I—Part C	0	6	2
†Technical Elective	—	—	3
			19

SIXTH QUARTER			
MGT 2314 Principles of Management	3	0	3
MGT 4338 Labor Management Relations	3	0	3
MGT 4330 Supervision	3	0	3
*PRN 5704 Printing Applications II *or*	2	15	7
*PRN 5381 Printing Applications II—Part A	2	3	3
*PRN 5282 Printing Applications II—Part B	0	6	2
*PRN 5283 Printing Applications II—Part C	0	6	2
†General Education Elective	3	0	3
			19

Total Credit Hours 112

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

Technical Electives—			
PRN 5207 Cooperative Lab	0	20	2
PRN 5316 Production Screen Printing	2	2	3
PRN 5317 Typesetting II	2	2	3
PRN 5390 Individual Study	3	0	3
PRN 5403 Copy Preparation II	2	4	4
General Education Electives—			
ART 1307 Basic Photography	2	2	3
ECO 3300 Introduction to Economics	3	0	3
JOU 1300 Practical Journalism	2	3	3
PSY 2504 General Psychology	5	0	5
SPH 1300 Oral Communications	3	0	3
SPH 2304 Public Speaking	3	0	3

Horticulture (V021)

Students in the Horticulture curriculum are trained in the areas of vegetable, flower, fruit, and ornamental plant production. Subject matter includes soil fertility and its modification, chemicals and their use, varieties of plants, bookkeeping, marketing, plant propagation, greenhouses and their construction, greenhouse management, and all phases of the production of vegetables, flowers and fruits, including bedding plants, potted plants and nursery stock.

Upon completion of the curriculum, students should be able to set up and operate their own specialized business, as well as manage and operate specialized vegetable, flower, fruit or nursery enterprises for others.

Students are trained by the use of classroom demonstrations, laboratory projects and cooperative work experiences. This program emphasizes practical "hands-on" training.

Students completing this program will be awarded a Diploma in Horticulture by the College, and all credit hours can be applied to the Horticulture Technology program.

For more information on the Horticulture Program, call 342-6926/6557.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CoOp /WK	HRS CR/ QTR
FIRST QUARTER				
BIO 1501 General Botany	3	4	0	5
HOR 3503 Nursery Technology	3	4	0	5
HOR 3400 Landscape Plants I: Woody	3	2	0	4
HOR 3404 Landscape Plants II: Woody and Herbaceous	3	2	0	4
				18
SECOND QUARTER				
*COM 1304 Intro. to Communications	3	0	0	3
HED 1204 First Aid I	1	2	0	2
HOR 3504 Grounds Maintenance I	3	4	0	5
HOR 3302 Landscape Graphics and Measurements	2	2	0	3
PME 5211 Small Engine Repair I	1	3	0	2
HOR 3111 Horticulture Seminar	1	0	0	1
				16
THIRD QUARTER				
FIN 3314 Business Mathematics I	3	0	0	3
SPH 1300 Oral Communications	3	0	0	3
*HOR 3505 Landscape Gardening	3	4	0	5
HOR 3410 Turf Management	2	4	0	4
HOR 3405 Grounds Maintenance II	2	4	0	4
				19
FOURTH QUARTER				
*HOR 3205 Cooperative Work Experience	0	0	20	2
HOR 4200 Work Experience Seminar	2	0	0	2
HOR 3401 Plant Propagation I	2	4	0	4
†Related Electives				4
†Technical Electives				4
				16
Total Credit Hours				69

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

Related Electives, Suggested—

All electives must be approved by program director or program counselor and should be selected from:

- ACC 3500 Small Business Accounting
- BIO 1500 Biological Science
- BIO 2300 Genetics
- BIO 2500 Introduction to Entomology
- BIO 2504 Selected Topics in Biology
- BUS 1400 Introduction to Business
- CHM 1500 Introduction to Chemistry
- EDP 3310 Microcomputer Operations
- PME 5214 Small Engine Overhaul

Technical Electives, Suggested—

- HOR 3202 Home and Yard Horticulture
- HOR 3210 Floral Design
- HOR 3360 Organic Methods in Horticulture
- HOR 3307 Landscape Your Own Home
- HOR 3312 Indoor Plants
- *HOR 4203 Advanced Floral Design
- HOR 4400 Arboriculture
- *HOR 4404 Plant Propagation II
- HOR 4411 Greenhouse Horticulture

Horticulture Technology (T009)

The Horticulture Technology program includes the study and practical application of many varied subjects in the field of horticulture. It consists of identifying and selecting plant materials, propagating, planting and growing plants; designing basic landscapes, and planting materials at the appropriate places and in the correct manner; properly maintaining plant materials; and managing the nursery, greenhouse and garden center. In addition, skills are developed in designing and building planters, walks, patios, fences and other landscape features. This program is designed to provide students with the knowledge, skills and attitudes that are necessary for independent, creative thinking essential to success in this field.

Graduates of this program find various career opportunities with nurseries, greenhouse operations, garden centers, landscape contractors, landscape maintenance companies and municipal/governmental agencies. The employee is usually required to carry out various responsibilities depending upon the needs of the employer.

Major jobs for which students are prepared include: Entry Level Jobs—garden center worker, greenhouse worker, groundskeeper, landscape construction worker, landscape worker, lawn service worker, nursery worker, plant propagator, salesperson of horticultural and nursery products, and tree pruner; Advanced Level Jobs—greenhouse superintendent, horticultural specialty grower—field, horticultural specialty grower—inside, landscape drafter, landscape gardener, nursery manager.

The Associate in Applied Science Degree—Horticulture Technology will be awarded by the College upon completion of this program.

For more information on the Horticulture Technology program. call (342) 6926/6557.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CoOp /WK	HRS CR/ QTR
FIRST QUARTER				
BIO 1501 General Botany	3	4	0	5
HOR 3503 Nursery Technology	3	4	0	5
HOR 3400 Landscape Plants I: Woody	3	2	0	4
*HOR 3404 Landscape Plants II: Woody and Herbaceous	3	2	0	4
				18
SECOND QUARTER				
*COM 1304 Intro. to Communications	3	0	0	3
HED 1204 First Aid I	1	2	0	2
HOR 3504 Grounds Maintenance I	3	4	0	5
HOR 3302 Landscape Graphics and Measurements	2	2	0	3
PME 5211 Small Engine Repair I	1	3	0	2
HOR 3111 Horticulture Seminar	1	0	0	1
				16
THIRD QUARTER				
FIN 3314 Business Mathematics I	3	0	0	3
SPH 1300 Oral Communications	3	0	0	3
*HOR 3505 Landscape Gardening	3	4	0	5
HOR 3410 Turf Management	2	4	0	4
HOR 3405 Grounds Maintenance II	2	4	0	4
				19
FOURTH QUARTER				
BIO 2500 Intro. to Entomology	3	4	0	5
HOR 3401 Plant Propagation I	2	4	0	4
HOR 3312 Indoor Plants	2	2	0	3
†Technical Elective	—	—	—	4
				16
FIFTH QUARTER				
*COM 3305 Communications II	3	0	0	3
CHM 1500 Introductory Chemistry I	3	4	0	5
HOR 4400 Arboriculture	2	4	0	4
BUS 3300 Human Relations	3	0	0	3
				15

SIXTH QUARTER				
ACC 3500 Small Business Accounting	5	0	0	5
†General Education Elective	3	0	0	3
HOR 4411 Greenhouse Horticulture	2	4	0	4
HOR 4200 Work Experience Seminar	2	0	0	2
				14
SEVENTH QUARTER				
*HOR 4404 Plant Propagation II	2	4	0	4
*COM 3306 Communications III	3	0	0	3
*HOR 3205 Cooperative Work Experience (Co-Op)	0	0	20	2
†Open Elective	—	—	—	3
				12

Total Credit Hours 110

*Prerequisite or corequisite required; check course description.

†**ELECTIVES:**

Technical Electives, Suggested—

BIO 1500 Biological Science
EDP 3310 Microcomputer Operations
HOR 3202 Home & Yard Horticulture
HOR 3210 Floral Design
*HOR 3304 Computer Aided Landscape Graphics
HOR 3307 Landscape Your Own Home
HOR 3360 Organic Methods in Horticulture
*HOR 4203 Advanced Floral Design
MGT 3303 Small Business Management
MGT 4330 Supervision

General Education Electives—

Courses must be selected from the areas of communications, social science and/or humanities.

Open Electives—

May be any technical or college transfer course.

Hospital Ward Secretary (V066)

The Hospital Ward Secretary (Clerk) curriculum is an eleven week (one quarter) program designed to prepare an individual to perform a variety of clerical duties such as: maintaining patients' charts, requesting equipment and services for patients, requesting supplies and equipment for the nursing unit and completing forms correctly.

Employment opportunities are available in doctors' offices, clinics, hospitals and other health agencies as hospital ward clerks or hospital ward secretaries.

A certificate will be awarded by the College upon completion of this program.

For more information, call the Medical Office and Records Department, (704) 342-6955.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
HRC 5300	Orientation to Health Record Clerk	2	2	3
*HRC 5301	Reception Skills	2	2	3
*HRC 5401	Unit Clerk Procedures	2	4	4
MED 3304	Medical Terminology	3	0	3

*Prerequisite or corequisite required; check course description.

RELATED COURSES				
MRT 3205	Health Record Procedures I	1	2	2
*MRT 3206	Health Record Procedures II	1	2	2
PSY 3314	Principles of Humanistic Psychology	3	0	3
SEC 3404	Typing I	3	2	4
				24

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Hotel/Restaurant Management (T025)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to a senior institution.

The Hotel and Restaurant Management curriculum trains students to work as supervisory and management personnel in hotels, restaurants and clubs. Areas of study include front office management, accounting, sales promotion, food and beverage control, personnel management, food preparation and service. The internship program is also provided to enable the student to acquire experience under the direction of a qualified manager and college supervisor.

The graduate has an opportunity for employment with airlines, colleges, schools, convalescent homes, government services, hospitals, hotels, clubs and restaurants.

The Associate in Applied Science Degree—Hotal/Restaurant Management will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6721, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIRST QUARTER						
HRM	3300	Intro. to Hotel/Restaurant Management	3	0	0	3
HRM	3104	Speaker Seminar I	1	0	0	1
*COM	1304	Communications I	3	0	0	3
†FIN	3314	Business Mathematics I	3	0	0	3
BUS	2304	Business Law I	3	0	0	3
SEC	3404	Typing I	3	2	0	4
						17
SECOND QUARTER						
HRM	4300	Hotel Restaurant Marketing	3	0	0	3
HRM	4200	Topics in Hotel/Restaurant Management	2	0	0	2
*COM	3305	Communications II	3	0	0	3
ACC	1604	Principles of Accounting I	5	2	0	6
BUS	3300	Human Relations	3	0	0	3
SPH	1300	Oral Communications	3	0	0	3
						20
THIRD QUARTER						
HRM	4301	Housekeeping Procedures	3	0	0	3
*HRM	3105	Speaker Seminar II	1	0	0	1
FSO	3504	Food Preparation I	2	9	0	5
ECO	3300	Introduction to Economics	3	0	0	3
SOC	1301	Group Interaction	3	0	0	3
MGT	4330	Supervision	3	0	0	3
						18

FOURTH QUARTER						
HRM	4504	Practicum I	3	0	20	5
HRM	4302	Hotel/Rest. Management Related Problems	3	0	0	3
FSO	4304	Food and Labor Cost Controls	3	0	0	3
*ACC	3434	Hotel/Restaurant Accounting	3	2	0	4
		Elective	3	0	0	3
						18
FIFTH QUARTER						
HRM	4505	Practicum II	3	0	20	5
HRM	3301	Financial and Legal Aspects of Innkeeping	3	0	0	3
FSO	4414	Garde Manger I	2	6	0	4
EDP	1500	Computer Literacy	5	0	0	5
EDN	4201	Color Schemes for Interior Design	1	2	0	2
						19
SIXTH QUARTER						
HRM	4506	Practicum III	3	0	20	5
MGT	4332	Personnel Management I	3	0	0	3
SSH	3302	Hotel and Motel Security	3	0	0	3
INS	3340	Principles of Risk and Insurance	3	0	0	3
HED	1204	First Aid I	1	2	0	2
						16

Total Credit Hours 108

*Prerequisite or corequisite required; check course description.

†MAT 1504, MAT 1505 or MAT 1514, Mat 1515 may be taken if student has met requirements.

Human Services Associate

Early Childhood (T073)
Social Services (T107)
Interpreter Training (T185)

Students should consult with a faculty adviser or program counselor regarding transferability of these programs to senior institutions

The Human Services Associate is a paraprofessional working in a variety of social, community and educational services. The Associate uses the knowledge and understanding of human behavior, group dynamics, and psychosocial processes, coupled with the use of appropriate helping skills, to work effectively with people.

The Department of Human Services Associate offers three programs of specialization. Each program, *EARLY CHILDHOOD, SOCIAL SERVICES,* and *INTERPRETER TRAINING,* offers students a unique two-year curriculum to enable them to work with specialized client populations. Clinical internships in a variety of community agencies enable students to gain specialized experience to parallel their classroom work.

(Fire Protection Technology is also under the Human Services Department. Please see the index for further information.)

For more information or answers to questions, call the program counselor or the program directors, weekdays, 8 a.m. to 5 p.m.:

342-6419	Counselor, Human Services Associate
342-6764	Program Director, Early Childhood
342-6659	Program Director, Social Services
342-6829	Program Director, Interpreter Training

The first step to enroll: call the Admissions Center, 342-6687.

To pursue an Associate in Applied Science Degree in Human Services, students should first make application to the College. Placement tests are required for entry into all Human Services Programs (except Fire Protection Technology). These are arranged at the time of application. Students then will see the program counselor who will advise them before they see the program director. Students should complete the courses listed below for each specialization: Early Childhood, Social Services, or Interpreter Training. Students may obtain a suggested course sequence list from the program counselor or program director.

Early Childhood Associate

The Early Childhood Associate curriculum prepares individuals to work with programs and/or centers concerned with the care and development of infants and young children. Through study and application in such areas as child growth and development, physical and nutritional needs of children, care and guidance of children, and communication with children and their parents, individuals will be able to function effectively in various programs and/or centers dealing with young children.

Job opportunities are available in such areas as day care centers, nursery schools, kindergartens, child development centers, hospitals, rehabilitation clinics, evaluation clinics, camps, and recreation centers.

To earn a degree in Early Childhood, students should complete 111 credit hours as follows: 67 credit hours of Major Courses, 25 credit hours of Related Courses, and 19 credit hours of General Education Courses.

MAJOR COURSES		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
HSA 3501	Introd. to Human Services	5	0	0	5
HSA 5501	Child Development	3	0	6	5
HSA 3511	Infant/Toddler Devel.	3	0	6	5
*HSA 3502	Interpersonal Relationships I	5	0	0	5
HSA 3400	Guidance for Young Young Children	3	0	3	4
HSA 4509	The Preschool Teacher in the Classroom	3	0	6	5
HSA 3510	School Age Child Care	3	0	6	5
*HSA 3326	Advanced Materials and Activities	3	0	0	3
*HSA 3340	Client Group Dynamics	3	0	0	3
*HSA 3341	Interpersonal Relationships II	3	0	0	3
*HSA 4614	Practical Problems of Child Care II	2	0	12	6
HSA 4500	Working with Parents	3	0	6	5
HSA 3310	The Exceptional Child	3	0	0	3
HSA 4310	Adult/Child Relations	3	0	0	3
HSA 3311	Materials and Activities for the Young Child	3	0	0	3
*HSA 3403	Introduction to Day Care Administration	3	0	3	4
					67

(Continued)

RELATED COURSES		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
*HSA 4508	Seminar in Human Services	0	0	15	5
BIO 2304	Human Nutrition	3	0	0	3
HED 1204	Standard First Aid	1	2	0	2
HED 1203	CPR	2	0	0	2
HED 2301	Human Sexuality	3	0	0	3
HSA 3421	Helping and Behavioral Stress	4	0	0	4
MUS 1304	Children's Music I	3	0	0	3
MUS 1305	Children's Music II	3	0	0	3
					25

GENERAL EDUCATION COURSES					
COM 1304	Introd. to Communications	3	0	0	3
*COM 3305	Communications II	3	0	0	3
*COM 3306	Communications III	3	0	0	3
SOC 1500	Sociology of the Family	5	0	0	5
PSY 2504	General Psychology	5	0	0	5
					19

Total Credit Hours 111

*Prerequisite or corequisite required; check course description.

Social Services

The Social Services Associate curriculum trains paraprofessionals for direct service delivery work in one of the many social service areas. These social service areas include family and child assistance, rehabilitation, health services, medical assistance, youth services, mental health, and assistance to the aging, blind, and developmentally-disabled.

Graduates will find employment with federal, state, county, and local government social service agencies and programs and with private organizations that have social service programs.

To earn a degree in Social Services, students should complete 106 credit hours as follows: 54 credit hours of Major Courses, 30 credit hours of Related Courses, 19 credit hours of General Education Courses, and 3 credit hours of Electives.

MAJOR COURSES		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
HSA 3501	Introduction to HSA	5	0	0	5
*HSA 3502	Interpersonal Relationships I	5	0	0	5
*HSA 3340	Client Group Dynamics	3	0	0	3
*HSA 3341	Interpersonal Relationships II	3	0	0	3
HSA 4511	Introduction to Social Welfare	5	0	0	5
HSA 4505	Helping Relationship: Theory	5	0	0	5
*HSA 3600	Community Organization & Casework Preparation	3	0	9	6
	OR				
HSA 4609	Caseload Management	3	0	9	(6)
*HSA 3604	Helping Relationship: Technique	3	0	9	6
	OR				
HSA 4524	Helping Interview I	2	0	9	(5)
HSA 3421	Helping and Behavioral Stress	4	0	0	4
*HSA 3414	Helping Relationship: Advanced Technique	3	0	3	4
*HSA 4508	Seminar	0	0	15	5
HED 2301	Human Sexuality in the Helping Skills	3	0	0	3
					54

RELATED COURSES					
SOC 2515	Social Problems	5	0	0	5
HED 1204	First Aid I	1	2	0	2
*PSY 2505	Human Development	5	0	0	5
*PSY 2514	Abnormal Psychology	5	0	0	5
SEC 3404	Typing I	3	2	0	4
	OR				
EDP 3310	Microcomputer Operations	3	0	0	(3)
MED 3304	Medical Terminology I	3	0	0	3
BIO 3301	Basic Health Science I	3	0	0	3
BIO 3302	Basic Health Science II	3	0	0	3
					30

GENERAL EDUCATION COURSES					
COM 1304	Introd. to Communications	3	0	0	3
*COM 3305	Communications II	3	0	0	3
*COM 3306	Communications III	3	0	0	3
PSY 2504	General Psychology	5	0	0	5
SOC 2514	Introduction to Sociology	5	0	0	5
					19

ELECTIVES (to be approved by faculty adviser) 3

Total Credit Hours 106

*Prerequisite or corequisite required; check course description.

Interpreter Training

The Interpreter Training curriculum prepares individuals to work as interpreters for the deaf and provides instruction for presently employed interpreters who wish to further develop their skills. Instruction includes the study of hearing and deafness, the use of American Sign Language and fingerspelling, and the process of interpreting and translating in various situations. Knowledge of theory is supplemented with the opportunity to practice interpreting to develop receptive ability and clarity and speed of translation.

Graduates of the program may find employment translating spoken language into sign language for deaf individuals or interpreting sign language into oral or written language for hearing individuals. Job opportunities exist with educational, medical, legal, and community agencies as teacher assistants, interpreter/tutors, or secretary/interpreters. Individuals may also choose to be self-employed as freelance interpreters.

To earn a degree in Interpreter Training, students should complete 114 credit hours as follows: 69 credit hours of Major Course Requirements, 23 credit hours of Related Course Requirements, 19 credit hours of General Education Requirements, and 3 credit hours of Electives. (Students may obtain suggested course sequence list from the program counselor or department.)

MAJOR COURSES		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
HSA 3544	Sign Language	5	0	0	5
	OR				
HSA 3324	Conversational Sign Language I	3	0	0	(3)
	AND				
HSA 3325	Conversational Sign Language II	3	0	0	(3)
*HSA 3345	Sign Language II	5	0	0	5
*HSA 3518	Interpreting Idioms	5	0	0	5
*HSA 3304	Sign Systems and Specialized Vocabulary for Interpreters	3	0	0	3
HSA 4304	Orientation to Deafness	3	0	0	3
HSA 4300	Hearing and Deafness	3	0	0	3
HSA 3305	Intro. to Interpreting	3	0	0	3
*HSA 3514	Interpreting I	2	6	0	5
*HSA 3515	Interpreting II	2	6	0	5
*HSA 3316	Interpreting III	2	6	0	5
*HSA 3106	Sign to Voice Lab	0	2	0	1
*HSA 3517	Sign to Voice Interpreting	2	6	0	5
*HSA 3501	Intro. to Human Services	5	0	0	5
*HSA 3502	Interpersonal Relationships	5	0	0	5
*HSA 3341	Interpersonal Relationships II	3	0	0	3
*HSA 3340	Client Group Dynamics	3	0	0	3
*HSA 4508	Seminar	0	0	15	5
					69

†Related Course Requirements	23
General Education Requirements	19
Electives	3
Total Credit Hours	114

†Related course work is selected, with the approval of the program director, depending on the area of interest the students wish to combine with their interpreting skills. The program director will work individually with students to help them choose appropriate courses.

*Prerequisite or corequisite required; check course description.

Early Childhood Aide Certificate (V067)

The Early Childhood Aide Certificate program trains students to qualify as Teacher Aides. The Aide Certificate program may be used as credit toward the Early Childhood Assistant.

SPECIALIZED COURSES		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
HSA 3311	Materials and Activities for the Young Child	3	0	0	3
HSA 3400	Guidance for Young Children	3	0	3	4
HSA 4509	The Preschool Teacher in the Classroom	3	0	6	5
HSA 5200	Human Relations	2	0	0	2
HSA 5501	Child Development	3	0	6	5
GENERAL EDUCATION COURSE					
COM 5500	Communication Skills	5	0	0	5

Industrial Safety, Security and Health Management Technology (T153)

The Industrial Safety, Security and Health Management Technology curriculum prepares individuals for employment in three fields: industrial safety, industrial security, and industrial health management. The curriculum focuses on security, on the prevention of crime in industry, on the protection of workers from unsafe practices and on public health. It emphasizes federal regulations and acts that have been adopted to provide for a safer environment. The curriculum provides instruction in criminal behavior and criminal law, methods of detecting and preventing illegal acts, principles of safety, fire prevention and protection, electrical safety and hygiene. On completion of the curriculum, graduates may find employment in industry; state and federal government agencies; and fire prevention, safety and security programs.

The Associate in Applied Science Degree—Industrial Safety, Security and Health Management will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6582 weekdays 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
MAJOR COURSES				
SSH 3500	Introduction to Loss Prevention	5	0	5
PSC 3510	Criminal Law	5	0	5
PSC 4501	Constitutional Law	5	0	5
SSH 4510	Principles of Interviewing and Interrogation	5	0	5
PSC 3504	Crime Scene Technology	4	2	5
SSH 3301	Principles of Industrial Management	3	0	3
PSC 4520	Public Relations	5	0	5
FIP 3406	Arson Investigation I	3	2	4
				37
RELATED COURSES				
*PSC 4506	Advanced Crime Scene Technology	4	2	5
PSC 4505	Criminal Investigation	5	0	5
LEX 4321	Tort Law	3	0	3
EDP 3300	Introd. to Computer Concepts	3	0	3
SEC 3404	Typing I	3	2	4
PSC 4312	Organized Crime	3	0	3
SSH 4520	Industrial Investigations	5	0	5
				28
GENERAL EDUCATION COURSES				
*COM 1304	Introduction to Communications	3	0	3
*COM 3305	Communications II *or*			
*COM 1305	English Composition II	3	0	3
*COM 3306	Communications III *or*			
*COM 1306	English Composition III	3	0	3
SPH 1300	Oral Communications	3	0	3
†Elective—General Education		3	0	3
†Elective—General Education		3	0	3
				18

In consultation with adviser, student selects 20 credit hours from the following list of technical electives.

TECHNICAL ELECTIVES				
SSH 4511	Nuclear Safety	5	0	5
SSH 3501	Intro. to Principles of Safety	4	2	5
SSH 3504	Occupational Safety and Health I	4	2	5
SSH 4501	Industrial Hygiene and Toxicology	4	2	5
*SSH 3505	Occupational Safety and Health II	4	2	5
SSH 4512	Nuclear Security	5	0	5
SSH 4513	Computer Security	5	0	5
SSH 3503	Retail Security	5	0	5
SSH 4514	Electronics for Security	5	0	5
SSH 4515	Executive Protection and Terrorism	5	0	5
PSC 4504	Criminal Procedure and Rules of Evidence	5	0	5
SSH 3302	Hotel and Motel Security	3	0	3
SSH 3304	Access Control and Loss Prevention	3	0	3
SSH 4304	Special Problems in Industrial Safety	2	2	3
SSH 4504	Security Problems and Practices I	4	2	5
				20

Total Credit Hours 103

*Prerequisite or corequisite required; check course description.

†General Education electives must be selected from the areas of communications, social science, or the humanities.

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Insurance (T128)

The Insurance curriculum is designed to prepare an individual for entry into the insurance field. Objectives of this curriculum are to provide the individual with knowledge and skills in the principles of life and health insurance, social insurance, property and liability insurance, governmental influences on the insurance industry, influence of the insurance industry on the economy, and organization and management in business operations.

Employment opportunities are available in areas such as insurance sales agent, claim adjuster, special agent, claim examiner, and rate clerk.

The Associate in Applied Science Degree in Insurance will be awarded upon completion of this program.

Students desiring to earn a Diploma in Insurance shall select 65 hours from the following courses in consultation with adviser.

Students desiring a Certificate in Insurance shall select 18 hours from the following courses in consultation with adviser.

For more information or answers to questions, call the program director, (704) 342-6560, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
INS	3340	Principles of Risk & Insurance	3	0	3
*INS	3354	Fire Insurance	3	0	3
*INS	3355	Casualty Insurance	3	0	3
INS	4201	Part 1 Principles of Life and Health Insurance	2	0	2
*INS	4202	Part 2 Life and Health Company Operations	2	0	2
*INS	4203	Part 3 Legal Aspects of Life and Health Insurance	2	0	2
INS	4280	NASD Series 6 and 63 Review			
		OR			
INS	4200	NASD Series 22 Review	2	0	2
INS	4294	General Insurance Part I—Introduction	2	0	2
*INS	4295	General Insurance Part II—Life, Accident and Health	2	0	2
*INS	4296	General Insurance Part III—Fire & Casualty	2	0	2
*INS	4297	General Insurance Part IV—Adjusting	2	0	2
INS	4320	Financial Service, Environment and Professions (HS 320)	3	0	3
INS	4321	Income Taxation for Financial Planning (HS 321)	3	0	3
INS	4323	Financial Statement Analysis—Individual Insurance Benefits (HS 323)	3	0	3
INS	4324	Insurance Environment and Operations (HS 324)	3	0	3
INS	4364	General Insurance Rating	3	0	3
SEC	3326	Insurance Terms and Vocabulary	3	0	3
SEC	3426	Insurance Office Skills	3	2	4
Technical Electives			19	0	19
			65	2	66

TECHNICAL ELECTIVES

In consultation with adviser, students select 19 credit hours from the following list of technical electives.

INS	4315	Personal Risk Management and Insurance I (HS 315)	3	0	3
INS	4316	Personal Risk Management and Insurance II (HS 316)	3	0	3
INS	4317	Multi-Line Insurance Operations (HS 317)	3	0	3
INS	4322	Financial Planning Economics (HS 322)	3	0	3
INS	4325	Group Benefits and Social Insurance (HS 325)	3	0	3
INS	4326	Pensions and Other Retirement Plans (HS 326)	3	0	3
INS	4327	Employee Benefits (HS 327)	3	0	3
INS	4328	Investment Principles and Their Applications to Personal Finance (HS 328)	3	0	3
INS	4329	Wealth Accumulation Planning (HS 329)	3	0	3
INS	4330	Estate and Gift Tax Planning (HS 330)	3	0	3
INS	4331	Planning for Business Owners and Professions (HS 331)	3	0	3
INS	4332	Financial and Estate Planning and Applications (HS 332)	3	0	3
INS	4394	Claims Settlement	3	0	3
INS	4400	Disability Income Training Course (LUTC)	4	0	4
INS	4401	NASD Series 7 Review	4	0	4
INS	4404	Financial Planning Skills (LUTC)	4	0	4
INS	4700	Advanced Sales Training Course (LUTC)	7	0	7
INS	4701	Personal Insurance Training Course (LUTC)	7	0	7
INS	4702	Business Insurance Training Course (LUTC)	7	7	7
*SEC	4326	Insurance Office Skills	3	0	3

RELATED COURSES

ACC	4364	Budget and Record Keeping	3	0	3
BUS	2304	Business Law I	3	0	3
EDP	3310	Microcomputer Operations	3	0	3
MGT	2314	Principles of Management	3	0	3
MKT	3320	Fundamentals of Selling	3	0	3
SEC	3404	Typing I	3	2	4
SEC	4305	Business Communications	3	0	3
Related Electives			11	0	11
			33	2	33

(Continued)

RELATED ELECTIVES

In consultation with adviser, students select 12 credit hours from the following list of related electives.

AUB 5203	Estimating Auto Body Damages	2	0	2
LEX 3320	Evidence	3	0	3
LEX 4321	Tort Law	3	0	3
*LEX 4332	Trial Preparation and Procedure	3	0	3
LEX 4341	Worker's Compensation Laws	3	0	3
LEX 4361	Interpreting Medical Reports	3	0	3
LEX 4430	Wills, Trust and Probate	3	2	4
MGT 4332	Personnel Management I	3	0	3
*MKT 4325	Sales Management	3	0	3
PSC 3303	Motor Vehicle Laws of North Carolina	2	2	2
SEC 3311	Receptionist Skills	3	0	3
*SEC 4326	Insurance Office Problems	2	2	3
TRN 4351	Freight Claims	3	0	3

GENERAL EDUCATION

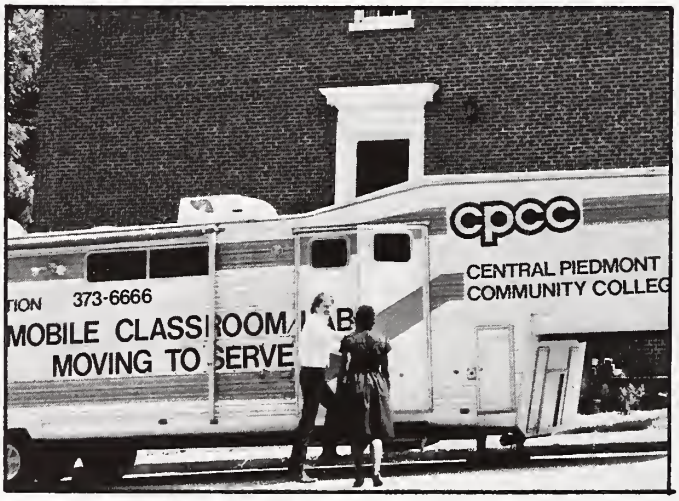
BUS 3300	Human Relations	3	0	3
COM 1304	Introd. to Communications	3	0	3
COM 3515	Advanced Grammar	5	0	5
SOC 1301	Group Interaction	3	0	3
SPH 1301	Persuasive Speaking	3	0	3
†Elective—Social Science		3	0	3
		20	0	20

Total Credit Hours 119

*Prerequisite or corequisite required; check course description.

†General Education courses and electives must be selected from the area of communications, social science or the humanities.

NOTE: Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.



Law Enforcement Technology (T064)

The Law Enforcement Technology curriculum prepares individuals for a career in the law enforcement services occupations field and other allied occupations. Law enforcement occupations require a thorough understanding of criminal behavior, criminal investigation, interpersonal communications, law, patrol operations, psychology, sociology, traffic management, and other aspects of law enforcement administration and operations.

Job opportunities are available with federal, state, county and municipal governments. In addition, knowledge, skills and abilities acquired in this course of study qualify one for job opportunities with private enterprise in such areas as industrial, retail and private security.

The Associate in Applied Science Degree—Law Enforcement will be awarded upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6720, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
PSC	3303	Motor Vehicle Laws of North Carolina	2	2	3
PSC	3500	Introduction to Criminology	5	0	5
PSC	3501	Introduction to Law Enforcement	5	0	5
PSC	3504	Crime Scene Technology	4	2	5
PSC	3510	Criminal Law	5	0	5
PSC	3514	Police Organization and Administration	5	0	5
PSC	4310	Self Defense and Weaponry	1	4	3
PSC	4312	Organized Crime	3	0	3
PSC	4501	Constitutional Law	5	0	5
PSC	4503	Law Enforcement Psychology	5	0	5
*PSC	4504	Criminal Procedure and Rules of Evidence	5	0	5
PSC	4505	Criminal Investigation	5	0	5
*PSC	4506	Advanced Crime Scene Technology	4	2	5
PSC	4510	Police Operations	4	2	5
PSC	4511	Administration of Justice	5	0	5
PSC	4520	Public Relations	5	0	5
					74

RELATED COURSES					
SSH	3301	Principles of Industrial Management	3	0	3
SSH	3500	Introduction to Loss Prevention	5	0	5
SSH	4510	Principles of Interviewing and Interrogation	5	0	5
SSH	4515	Executive Protection and Terrorism	5	0	5
CSC	3504	Juvenile Justice System	5	0	5
SEC	3404	Typing I	3	2	4
					27

GENERAL EDUCATION COURSES					
*COM	1304	Intro. to Communications	3	0	3
*COM	1305	English Composition II *or*			
*COM	3305	Communications II	3	0	3
*COM	1306	English Composition III *or*			
*COM	3306	Communications III	3	0	3
SPH	1300	Oral Communications	3	0	3
†Elective—General Education			3	0	3
†Elective—General Education			3	0	3
					18

Total Credit Hours 119

*Prerequisite or corequisite required; check course description.
†General Education electives must be selected from the areas of communications, social science or the humanities.

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Machinist (V032)

The Machinist curriculum gives students the opportunity to acquire basic skills and related technical information necessary to gain employment as machinists. The machinist is a skilled metalworker who shapes metal by using machine tools and hand tools. Machinists must be able to set up and operate the machine tools found in a modern shop. The machinist is able to select the proper tools and materials required for each job and to plan the cutting and finishing operations in their proper order so that the work can be finished according to blueprint or written specifications. The machinist makes computations relating to dimensions of work, tooling, feeds and speeds of machining. Precision measuring instruments are used to measure the accuracy of work. The machinist also must know the characteristics of metals so that annealing and hardening of tools and metal parts can be accomplished in the process of turning a block of metal into an intricate precise part.

In addition to the skills listed above, machinist students at CPCC learn to operate, set up, and program computer numerical control (CNC) machine tools.

CPCC has two machine shop labs: one has conventional equipment including engine lathes, milling, drilling and grinding machines; the other is equipped with CNC turning and machining center machine tools, the Numeridex programming system and a coordinate measuring machine.

A Diploma is awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, 342-6919 or 342-6930 weekdays 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
MAC 5200	Precision Instrument Reading	2	0	2
MAC 5300	Fundamentals of Computer Numerical Control Programming	3	0	3
MAC 5301	Blueprint Reading for Machinists I	1	2	2
*MAC 5311	Basic Lathe Operations	1	6	3
MAC 5401	Basic Calculations for Machinists I	4	0	4
*MAC 5422	Basic Milling Operations	2	6	4
				18
SECOND QUARTER				
*MAC 5302	Blueprint Reading for Machinists II	1	2	2
*MAC 5304	Computer Numerical Control Programming—Turning Center	2	2	3
*MAC 5313	Layout, Hand Tool and Drill Press Procedures	1	6	3
*MAC 5320	Calculations for Machinists II	3	0	3
*MAC 5424	Grinding Machine Operations	2	6	4
MEC 5214	Practical Metallurgy I	1	3	2
*MAC 5205	Coordinate Measuring Machine Applications	1	2	2
				19

THIRD QUARTER				
COM 5500	Communication Skills	5	0	5
PHY 5304	Shop Science I	2	2	3
*MAC 5305	Computer Numerical Control Programming—Machining Center	2	2	3
MAC 5303	Computer Numerical Control Machining Center Operations	2	3	3
*MEC 5215	Practical Metallurgy II	1	3	2
*MAC 5315	General Machining and Maintenance	1	6	3
				19
FOURTH QUARTER				
MAC 5306	Computer Numerical Control Turning Center Operations	2	3	3
*MAC 5310	Computer Numerical Control Programming Applications	2	2	3
*MAC 5307	Machine Tool Applications	0	9	3
HSA 5200	Human Relations	2	0	2
*PHY 5305	Shop Science II	2	2	3
WLD 5210	Basic Oxyacetylene Welding	1	3	2
†Elective				2
				18

Total Credit Hours 74

*Prerequisite or corequisite required; check course description.

†**RECOMMENDED ELECTIVES:**

HED 1204	Standard First Aid I	1	2	2
MAC 5309	Computer Assist Programming for Computer Numerical Control Machines	2	2	3
PME 5214	Small Engine Overhaul	1	3	2
SEC 5200	Keyboarding	1	2	2
WLD 5220	Basic Electric Arc Welding	1	3	2
WLD 5250	Basic Gas Metal Arc Welding	1	3	2

Manufacturing Engineering Technology (T050)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The primary objective of the Manufacturing Engineering Technology curriculum is the training of personnel to assist the engineer or small industry in planning, tooling, operating, servicing and supervising manufacturing operations. This curriculum provides a basic background of mechanical and related theory with specific skills in the use of manufacturing and testing equipment. Students are given experience in operating and servicing machines, accompanied by general education and management courses.

A graduate of this program may qualify for an entry position in one of several manufacturing functions: methods, analysis, production scheduling, quality control, materials testing, plant layout, time study, machine tooling, maintenance, and equipment and instrument work.

The Manufacturing Engineering Technology curriculum at Central Piedmont Community College is a comprehensive program featuring extensive hands-on CAD/CAM instruction in the practical application of both fundamental and highly specialized manufacturing engineering technology principles. Students advance from basic courses to specialized manufacturing, industrial and mechanical engineering technology courses that provide concentrated study in the practical application of state-of-the-art technological knowledge and skills needed in today's high technology manufacturing industry, including Robotics/Automation and CAD/CAM.

Graduates may continue study for two or more years at a senior institution offering Bachelor of Engineering Technology (BET) programs.

Upon successful completion of this curriculum, an Associate in Applied Science Degree in Manufacturing Engineering Technology will be awarded.

For more information, call the program counselor at (704) 342-6881, the Manufacturing Engineering Technology program director at (704) 342-6553, or the Technology Division head at (704) 342-6557.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
*COM 1304 Intro. to Communications	3	0	3
*MAT 3507 Engineering Technology Math I	5	0	5
DFT 3404 Mechanical Drafting I	2	6	4
MAC 3201 Machine Operations	1	3	2
MEC 3101 Mechanical/Manufacturing Seminar	1	0	1
			15
SECOND QUARTER			
*MAT 3508 Engineering Technology Math II	5	0	5
*PHY 1404 Physics I: Basic Mechanics	3	2	4
MEC 3404 Manufacturing Processes I	3	3	4
†Technical Elective	3	0	3
			16
THIRD QUARTER			
*PHY 1405 Physics II: Elastic and Thermal Properties of Matter	3	2	4
*COM 3305 Communications II	3	0	3
*MAT 3509 Engineering Technology Math III	5	0	5
*MEC 3405 Manufacturing Processes II	3	3	4
EDP 3405 Microcomputer Programming —BASIC	3	2	4
			20
FOURTH QUARTER			
*COM 3306 Communications III	3	0	3
*PHY 1406 Physics III: Electricity and Magnetism	3	2	4
*DFT 3315 Mechanical Computer-Aided Drafting (CAD) I 2-D	1	6	3
MEC 4403 Engineering Materials	3	3	4
ISC 3301 Engineering Economic Analysis	2	3	3
			17
FIFTH QUARTER			
*DFT 3316 Mechanical Computer-Aided Drafting (CAD) II 3D	1	6	3
*ISC 4304 Production Planning	2	3	3
*ISC 4314 Inspection and Quality Control	2	3	3
*ELN 3407 Electrical/Electronic Devices and Controls	3	3	4
*MAC 3202 CNC Programming and Machining	1	3	2
†General Education Elective	3	0	3
			18
SIXTH QUARTER			
SPH 1300 Oral Communications	3	0	3
*ISC 4305 Plant Layout and Materials Handling	2	3	3
*ISC 4307 Introduction to Robotics	2	3	3
*MEC 4434 Hydraulics and Pneumatics	2	6	4
*ISC 3314 Computer-Assisted-Manufacturing (CAM)	2	3	3
†General Education Elective	3	0	3
			19

(Continued)

SEVENTH QUARTER				
*MEC	4404 Tool and Die Design	2	6	4
ISC	4400 Time and Motion Study	2	6	4
*ISC	4308 Robotics/Automation	2	3	3
*ISC	4316 Process Planning	2	3	3
†Technical Elective		3	0	3
				17

Total Credit Hours 122

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

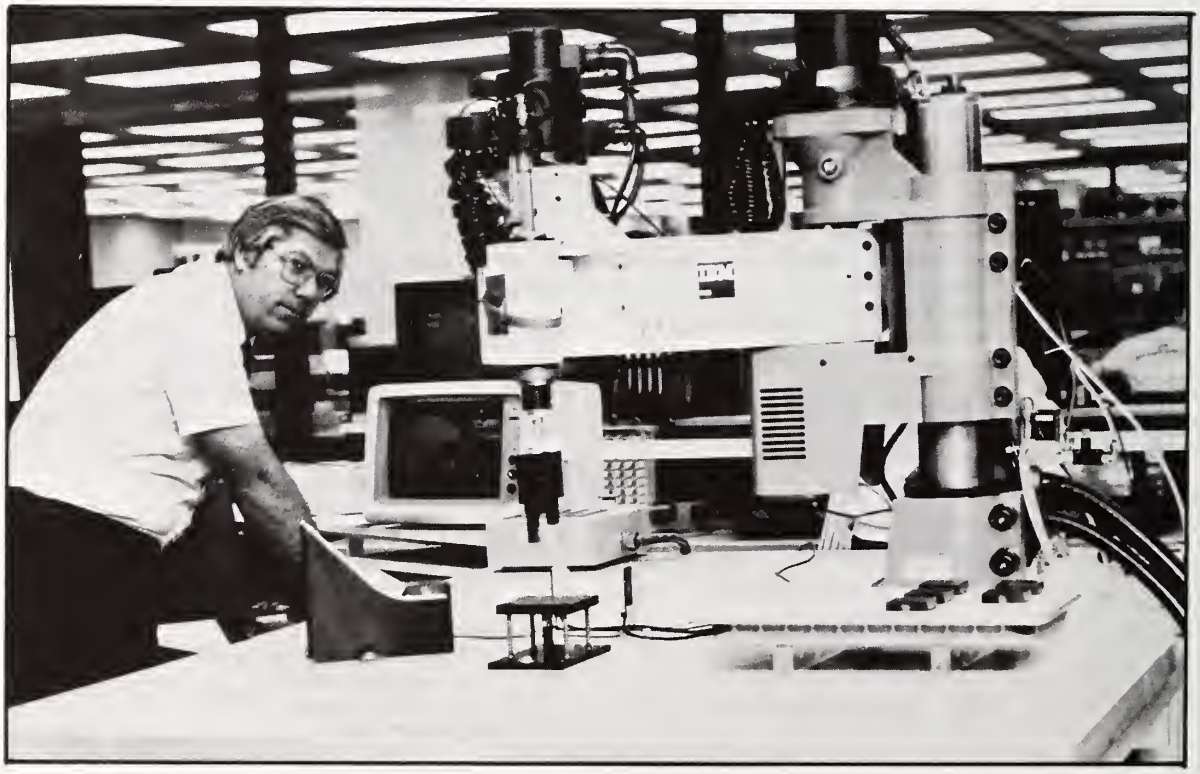
Technical Electives—

DFT 3314 Mechanical Computer-Aided Drafting (CAD)—Small Systems
DFT 3319 CAD Project
DFT 3317 Mechanical Computer-Aided Drafting (CAD) III—Detailing
DFT 3318 Mechanical Computer-Aided Drafting (CAD) IV—Assembly
DFT 3406 Descriptive Geometry
EDP 3406 Microcomputer Programming—Advanced BASIC
ELN 4415 Industrial Programmable Controllers
ELN 4525 Electrical Machines I
MEC 3524 Mechanics of Materials
MEC 4284 Cooperative Work Experience
MEC 4304 Compound Angles
MEC 4327 Microcomputer Applications Project
MEC 4405 Mechanisms
MEC 4402 Machine Design
MEC 4425 Thermodynamics
MEC 4508 Applied Mechanics

General Education Electives—

Courses must be chosen from the areas of communications, social science, and/or humanities.

Manufacturing Engineering Technology is a TAC/ABET accredited program.



Marketing and Retailing (T020)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The Marketing and Retailing curriculum is designed to prepare students for entry into middle-management positions in various marketing and retailing businesses and industries. The purpose will be fulfilled through study and application in areas such as marketing and merchandising techniques, management, selling, advertising, retailing and credit and collection procedures.

Through knowledge and skills students will be able to perform marketing and distribution activities, and through the development of competencies and qualities will be provided the opportunity to enter an array of marketing and distribution jobs.

According to a 1985 study by the Bureau of Labor Satatistics, occupations with the greatest number of new jobs by 1995 include wholesale and retail salespeople. Courses focus on techniques of marketing, merchandising, management, supermarket management, sales, advertising, retailing and credit and collection procedures. Case studies, simulation, role playing, cooperative experience and research are integral parts of the program.

The Associate in Applied Science Degree—Marketing and Retailing will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6529, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES		HRS CLS /WK	HRS LAB /WK	HRS CoOp /WK	HRS CR/ QTR
BUS 1400	Introduction to Business	3	2	0	4
BUS 2304	Business Law I	3	0	0	3
BUS 2305	Business Law II	3	0	0	3
BUS 3300	Human Relations	3	0	0	3
BUS 3304	Business Statistics	3	0	0	3
MKT 1304	Marketing I	3	0	0	3
*MKT 1305	Marketing II	3	0	0	3
MKT3320	Fundamentals of Selling	3	0	0	3
MKT4320	Retailing	2	2	0	3
MKT4321	Advertising	3	0	0	3
*MKT4355	Channels of Distribution	3	0	0	3
ACC 1604	Principles of Accounting I	5	2	0	6
*ACC 1605	Principles of Accounting II	5	2	0	6
EDP 1500	Computer Literacy	5	0	0	5
EDP 3324	Advanced Microcomputer Operations	2	2	0	3
†FIN 3314	Business Mathematics I	3	0	0	3
*FIN 3315	Business Mathematics II	3	0	0	3
INS 3340	Principles of Risk and Insurance	3	0	0	3
MGT4330	Supervision	3	0	0	3
SPH 1300	Oral Communications	3	0	0	3
*†COM 1304	Introd. to Communications	3	0	0	3
*†COM 3305	Communications II	3	0	0	3
*COM 3306	Communications III	3	0	0	3
ECO 2304	Economics I	3	0	0	3
*ECO 2305	Economics II	3	0	0	3
*ECO 2306	Economics III	3	0	0	3
MKT3204	Cooperative Education I	0	0	20	2
*MKT3205	Cooperative Education II	0	0	20	2
*MKT3206	Cooperative Education III	0	0	20	2
General Elective		3	0	0	3
†Technical Electives					20
Total Credit Hours					116

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

Technical Electives—

Select 20 credit hours after consultation with a faculty adviser.

*MKT3314	Applied Retail Calculations	2	4	0	3
MKT3330	Introduction to Textiles	3	0	0	3
*MKT4305	Advanced Selling Skills	3	0	0	3
MKT4322	Purchasing	3	0	0	3
*MKT4325	Sales Management	3	0	0	3
MKT4340	Department Store Merchandising	3	0	0	3
*MKT4354	Display and Design	3	0	0	3
MKT4360	Supermarketing I	3	0	0	3
*MKT4364	Supermarketing II	3	0	0	3
MKT4365	Supermarket Law	3	0	0	3
*MKT4374	Food Merchandising	3	0	0	3
*MKT4384	Customer Relations	3	0	0	3

†MAT 1504, MAT 1505, MAT 1514, COM 1305, COM 1306 may be taken if student has met requirements.

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Mechanical Drafting (V017)

The Drafting—Mechanical curriculum prepares individuals to enter the field of mechanical drafting. Courses are arranged in sequence to develop drafting skills and proficiency in mathematics and science. The draftsman associates with many levels of personnel—administrators, engineers, skilled workers—and must be able to communicate effectively with them.

The mechanical drafting graduate performs the duties of a general drafter, specializing in making rough drafting sketches of proposed mechanical devices, and then draws necessary details. The drafter also prepares accurate scale drawings of parts for machines from specifications.

The Mechanical Drafting program at Central Piedmont Community College is a comprehensive Computer-Aided-Drafting (CAD) curriculum that emphasizes CAD throughout the program from basic part drawings to complete detailing and assembly working drawings. Students gain extensive hands-on experience with both small and large CAD systems.

A Diploma in Mechanical Drafting will be awarded by the College upon completion of this program. Students may apply appropriate courses toward the Mechanical Engineering Technology program.

For more information, call the Program counselor at (704) 342-6881, the Mechanical Engineering Technology Program director at (704) 342-6553, or the Technology Division head at (704) 342-6557.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
*COM 1304 Intro. to Communications	3	0	3
MAT 5304 Basic Mathematics	3	0	3
DFT 3404 Mechanical Drafting I	2	6	4
MAC 3201 Machine Operations for Engineering Technicians	1	3	2
MEC 3101 Mechanical/Manufacturing Seminar	1	0	1
			13
SECOND QUARTER			
*MAT 5305 Basic Mathematics II	3	0	3
PHY 5304 Shop Science I	2	2	3
*DFT 3405 Mechanical Drafting II	2	6	4
*DFT 3314 Mechanical Computer-Aided Drafting (CAD) Small Systems	1	6	3
*MEC 3404 Manufacturing Processes I	3	3	4
			17
THIRD QUARTER			
PHY 5305 Shop Science II	2	2	3
MEC 5214 Practical Metallurgy I	1	3	2
*DFT 3315 Mechanical Computer-Aided Drafting (CAD) I 2D	1	6	3
*MEC 3405 Manufacturing Processes II	3	3	4
*COM 3305 Communications II	3	0	3
			15
FOURTH QUARTER			
*MEC 5215 Practical Metallurgy II	1	3	2
*DFT 3317 Mechanical Computer-Aided Drafting (CAD) III Detailing	1	6	3
*DFT 3318 Mechanical Computer-Aided Drafting (CAD) IV Assembly	1	6	3
*MEC 4304 Compound Angles	2	3	3
†General Education Elective	3	0	3
			14
FIFTH QUARTER			
*DFT 3319 CAD Project	1	6	3
BUS 3300 Human Relations	3	0	3
*DFT 3406 Descriptive Geometry	2	6	4
†Technical Elective	3	0	3
			13
Total Credit Hours			72

*Prerequisite or corequisite required; check course description.

†**ELECTIVES:**

Technical Electives—

DFT 3400 Electrical/Electronics Drafting
EDP 3405 Microcomputer Programming—BASIC
ISC 4305 Plant Layout and Materials Handling
MEC 4434 Hydraulics and Pneumatics

General Education Electives—

Courses must be chosen from the areas of communications, social science and/or humanities.

Mechanical Engineering Technology (T051)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The Mechanical Engineering Technology curriculum prepares technicians to assist engineers in the design and development of machinery and other mechanical equipment and parts and to perform other activities which require technical knowledge of factors such as tolerances, stresses, strains, friction and vibration. The scope of the subject matter covered prepares the graduate for employment in greatly diversified branches of the mechanical field.

The graduate may wish to work with testing experimental machinery and equipment and analyzing the results. Typical of such devices are internal combustion engines, steam turbines, jet and rocket engines, nuclear reactors, refrigeration and air conditioning equipment, missiles, spacecraft, marine equipment, motor vehicles, railroad equipment and machines for specialized industries such as textile mills. Another specialty area graduates may wish to pursue is that of the tool designer. Tool designers design tools and devices for the mass production of manufactured articles. They may also work with the instrumentation and design of machine tools or in equipping plants or mills which require special construction to accommodate power-producing or transmitting machinery.

The Mechanical Engineering Technology curriculum at Central Piedmont Community College features extensive use of CAD/CAM systems in the practical applications of both fundamental and highly specialized mechanical engineering technology principles. Students advance from basic courses to specialized mechanical engineering technology engineering courses that furnish concentrated study in the practical application of state-of-the-art technological knowledge and skills needed in today's high technology industry, including CAD/CAM and Robotics/Automation.

Graduates may continue study for two or more years at a senior institution offering Bachelor of Engineering Technology (BET) programs.

The Associate in Applied Science Degree—Mechanical Engineering Technology will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program counselor at (704) 342-6881, the Mechanical Engineering Technology program director at (704) 342-6553, or the Technolog Division head at (704) 342-6557.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
*COM 1304 Intro. to Communications	3	0	3
*MAT 3507 Engineering Technology Math I	5	0	5
DFT 3404 Mechanical Drafting I	2	6	4
MAC 3201 Machine Operations	1	3	2
MEC 3101 Mechanical/Manufacturing Seminar	1	0	1
			15
SECOND QUARTER			
*MAT 3508 Engineering Technology Math II	5	0	5
*PHY 1404 Physics I: Basic Mechanics	3	2	4
*DFT 3405 Mechanical Drafting II	2	6	4
MEC 3404 Manufacturing Processes I	3	3	4
			17
THIRD QUARTER			
*COM 3305 Communications II	3	0	3
*MAT 3509 Engineering Technology Math III	5	0	5
*PHY 1405 Physics II: Elastic and Thermal Properties of Matter	3	2	4
*MEC 3405 Manufacturing Processes II	3	3	4
EDP 3405 Microcomputer Programming—BASIC	3	2	4
			20
FOURTH QUARTER			
*COM 3306 Communications III	3	0	3
*PHY 1406 Physics III: Electricity and Magnetism	3	2	4
*DFT 3314 Mechanical Computer-Aided Drafting (CAD) — Small Systems	1	6	3
MEC 4403 Engineering Materials	3	3	4
†General Education Elective	3	0	3
			17
FIFTH QUARTER			
*DFT 3515 Mechanical Computer-Aided Drafting (CAD) I 2-D	1	6	3
*MEC 4508 Applied Mechanics	3	6	5
*MEC 4425 Thermodynamics	3	3	4
*DFT 3406 Descriptive Geometry	2	6	4
*MAC 3202 CNC Programming and Machining	1	3	2
			18
SIXTH QUARTER			
SPH 1300 Oral Communications	3	0	3
*MEC 3524 Mechanics of Materials	3	6	5
*MEC 4434 Hydraulics and Pneumatics	2	6	4
*ISC 4307 Introduction to Robotics	2	3	3
†Technical Elective	3	0	3
			18

(Continued)

SEVENTH QUARTER

*MEC 4404 Tool and Die Design	2	6	4
*MEC 4402 Machine Design	2	6	4
*MEC 4405 Mechanisms	2	6	4
†Technical Elective	3	0	3
†General Education Elective	3	0	3
			18

Total Credit Hours 123

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

Technical Electives, Recommended—

DFT 3316 Mechanical Computer-Aided-Drafting (CAD) II-3D
DFT 3317 Mechanical Computer-Aided Drafting III—Detailing
DFT 3318 Mechanical Computer-Aided Drafting IV—Assembly
EDP 3406 Microcomputer Programming—Advanced BASIC
ELN 3407 Electrical/Electronic Devices & Controls
ELN 4415 Industrial Programmable Controllers
ELN 4437 Microcomputer Applications in Robotics
ELN 4525 Electrical Machines I
ISC 3301 Engineering Economic Analysis
ISC 4304 Production Planning
ISC 4314 Inspection and Quality Control
ISC 4305 Plant Layout and Materials Handling
ISC 3314 Computer-Aided-Manufacturing (CAM)
ISC 4308 Robotics/Automation
ISC 4316 Process Planning
ISC 4404 Time and Motion Study
MEC 4284 Cooperative Work Experience
MEC 4304 Compound Angles
MEC 4327 Microcomputer Application Project

General Education Electives—
Courses must be chosen from the areas of communications, social science, and/or humanities.

Mechanical Engineering Technology is a TAC/ABET accredited program.

Medical Assisting (V031)

(One-Year Program)

The Medical Assisting program prepares graduates to assist the physicians in their offices or other medical settings such as hospitals and clinics, performing those administrative and clinical duties delegated by the physician and in accord with respective state laws governing such actions and activities.

The business/administrative duties include scheduling and receiving patients, obtaining patients' data, maintaining medical records, typing and medical transcription; handling telephone calls, correspondence, reports and manuscripts; assuming responsibility for office care, insurance matters, office accounts, and fees and collections; and purchasing and maintaining supplies and equipment.

The clinical duties may include preparing the patients for examinations, obtaining vital signs, taking medical histories, assisting with examinations and treatments, performing routine laboratory procedures and electrocardiograms, sterilizing instruments and equipment for office procedures, and instructing patients in X-ray and laboratory examinations.

Graduates of accredited programs may apply to take the certification examination administered by the Certifying Board of the American Association of Medical Assistants.

Advanced credits can be awarded upon completion of requirements for an Associate of Applied Science Degree in Medical Assisting (T-058).

Individuals desiring a career in medical assisting should, if possible, take biology, mathematics and typing courses prior to entering the program.

Students are admitted to the program every quarter. Specific entrance tests are required.

A Diploma in Medical Assisting will be awarded by the College upon completion of this program.

For more information, call the program director, 342-6973, weekdays.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIRST QUARTER					
MED 3304	Medical Terminology and Vocabulary I	3	0	0	3
MED 4302	Ethics and Law	3	0	0	3
SEC 3404	Typing I	3	2	0	4
MED 5204	Orientation to Health Careers	2	0	0	2
*COM 1304	Intro. to Communications	3	0	0	3
MED 3302	Medical Lab Fundamentals	2	2	0	3
		16	4	0	18
SECOND QUARTER					
*MED 3305	Medical Terminology and Vocabulary II	3	0	0	3
*MED 3404	Medical Economics	3	2	0	4
*MET 3400	Introduction to Medical Transcription	2	4	0	4
*MED 3214	Medical Office Administration I	2	0	0	2
*MED 3303	Clinical I	2	2	0	3
		12	8	0	16
THIRD QUARTER					
*MED 5614	Laboratory Procedures	3	6	0	6
*MED 3315	Medical Office Administration II	3	0	0	3
*MED 3306	Medical Terminology and Vocabulary III	3	0	0	3
*MED 5503	Clinical II	2	6	0	5
		11	12	0	17
FOURTH QUARTER					
*MED 5707	Medical Office Practice	0	0	21	7
*MED 5104	Medical Assisting Seminar	1	0	0	1
*MED 5415	Advanced Medical Office Procedures	4	0	0	4
HRC 5302	Professional Interactions and the Health Worker	3	0	0	3
		8	0	21	15

Total Credit Hours 66

*Prerequisite or corequisite required; check course description.

Medical Assisting (T058)
(Two Year Program)

The Medical Assisting curriculum prepares the graduate to be a multi-skilled practitioner qualified to perform administrative, clinical and laboratory procedures. Responsibilities include patient care management, administrative and clinical procedures, and managerial and supervisory functions. Developing competencies in effective communication, adhering to ethical and legal standards of medical practice, recognizing and responding to emergencies, demonstrating professional behavior and technical skills are emphasized.

Advanced credit may be allowed for completion of the Medical Assistant Grade I program approved by the Council on Medical Education of the American Medical Association in collaboration with the American Association of Medical Assistants.

Graduates are eligible to take the examination for certification as a Certified Medical Assistant given by the American Association of Medical Assistants.

Graduates may be employed in a variety of health related services, such as physician's offices, hospitals, clinics, industries, insurance companies, public health departments, nursing homes and extended care facilities.

Individuals desiring a career as a medical assistant should take biology, mathematics and typing courses prior to entering the program.

Any graduate of the existing one-year Medical Assisting program at Central Piedmont Community College will be admitted with advanced standing.

The Associate in Applied Science Degree—Medical Assisting Technology is awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, 342-6973, weekdays.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIRST QUARTER					
MED 3304	Medical Terminology and Vocabulary I	3	0	0	3
MED 4302	Ethics and Law	3	0	0	3
SEC 3404	Typing I	3	2	0	4
MED 5204	Orientation to Health Careers	2	0	0	2
*COM 1304	Intro. to Communications	3	0	0	3
MED 3302	Medical Lab Fundamentals	2	2	0	3
		16	4	0	18
SECOND QUARTER					
*MED 3305	Medical Terminology and Vocabulary II	3	0	0	3
*MED 3404	Medical Economics	3	2	0	4
*MET 3400	Introduction to Medical Transcription	2	4	0	4
*MED 3214	Medical Office Administration I	2	0	0	2
*MED 3303	Clinical I	2	2	0	3
		12	8	0	16
THIRD QUARTER					
*MED 5614	Laboratory Procedures	3	6	0	6
*MED 3315	Medical Office Administration II	3	0	0	3
*MED 3306	Medical Term. & Vocab. III	3	0	0	3
*MED 5503	Clinical II	2	6	0	5
		11	12	0	17
FOURTH QUARTER					
*MED 5707	Medical Office Practice	0	0	21	7
*MED 5104	Medical Office Assisting Seminar	1	0	0	1
*MED 5415	Advanced Medical Office Procedures	4	0	0	4
HRC 5302	Professional Interactions and the Health Worker	3	0	0	3
		8	0	21	15

After completion of the four-quarter diploma program, the required courses for the Medical Assisting degree program are as follows:

MAJOR COURSES:					
*MED 3307	Symptomatology	3	0	0	3
*MED 3300	Drug Therapy	3	0	0	3
*MED 5400	Clinical Education A	2	0	6	4
		8	0	6	10
RELATED COURSES:					
*MRT 3424	Principles of Disease	4	0	0	4
MGT 4330	Supervision	3	0	0	3
EDP 1500	Computer Literacy	3	4	0	5
		10	4	0	12
GENERAL EDUCATION:					
*COM 3305	Communications II	3	0	0	3
*COM 3306	Communications III	3	0	0	3
PSY 2504	General Psychology	5	0	0	5
SOC 2514	Introduction to Sociology	5	0	0	5
		16	0	0	16

Total Credit Hours 104

*Prerequisite or corequisite required; check course description.

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Medical Record Technology (T053)

CPCC has a transfer agreement for this program with Western Carolina University. Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The Medical Records curriculum prepares the individual with the knowledge and skills to serve as a technical assistant to a Medical Record Administrator.

Technical skills include analyzing and processing a medical record to assure completeness and accuracy according to set standards, coding diseases by recognized classification system, compiling and utilizing various health statistics, releasing medical information in accordance with ethical and legal guidelines, transcribing medical records, abstracting and retrieving health information used for evaluating health care services, and supervising one or more health record services. In small hospitals, nursing homes and clinics, the medical record technician is often employed to manage and process health information.

This curriculum is accredited by the American Medical Association's Committee on Allied Health Education and Accreditation, and the American Medical Record Association. Graduates of this curriculum are eligible to take the national accreditation examination to become "Accredited Record Technicians."

Placement tests in English, mathematics and reading are required for entrance into the program.

The Associate in Applied Science Degree—Medical Record Technology will be awarded by the College upon completion of this program.

For more information, call the program director, 342-6452, weekdays.

Note: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor. The curriculum may be taken on a full-time or part-time basis.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
*MRT 3201	Orientation to MRT	2	0	0	2
*MRT 3300	Medical Record Content and Maintenance	2	2	0	3
*MRT 4312	Legal Aspects of Medical Records	2	2	0	3
*MRT 4315	Medical Record Standards and Regulations	3	0	0	3
*MRT 3204	Directed Practice I	0	0	6	2
*MRT 3301	Quality Assurance in Health Care Facilities	2	2	0	3
*MRT 3302	Basic ICD-9-CM Coding	1	4	0	3
*MRT 3424	Principles of Disease	4	0	0	4
*MRT 4205	Directed Practice II	0	0	6	2
*MRT 3303	Advanced Coding Concepts	1	4	0	3
*MRT 3414	Medical Record Statistics	2	4	0	4
*MRT 4206	Directed Practice III	0	0	6	2
*MRT 4405	Medical Record Seminar	4	0	0	4
*MRT 4406	Directed Practice IV	0	0	12	4
*MRT 4407	Directed Practice V	0	0	12	4

GENERAL COURSES:					
BIO 1504	Human Anatomy and Physiology I	3	4	0	5
BIO 1505	Human Anatomy and Physiology II	3	4	0	5
*COM 1304	Intro. to Communications	3	0	0	3
†*COM 1305	Communications II	3	0	0	3
†*COM 1306	Communications III	3	0	0	3
EDP 3310	Microcomputer Operations	2	2	0	3
MED 3304	Medical Terminology and Vocabulary I	3	0	0	3
*MED 3305	Medical Terminology and Vocabulary II	3	0	0	3
*MED 3306	Medical Terminology and Vocabulary III	3	0	0	3
*MET 3400	Introduction to Medical Transcribing	2	4	0	4
MGT 4330	Supervision	3	0	0	3
PSY 2504	General Psychology	5	0	0	5
SEC 3404	Typing I	3	2	0	4
*SEC 3405	Typing II	3	2	0	4
SOC 2514	Introduction to Sociology	5	0	0	5
Elective (3)		3	0	0	3

Total Credit Hours 105

*Prerequisite or corequisite required; check course description.

†COM 3305 and COM 3306 may be substituted for COM 1305 and COM 1306.

Medical Transcription (V127)

The Medical Transcription curriculum is designed to provide students with the knowledge and skills necessary for employment as a medical transcriptionist. This objective is fulfilled through study and application in transcribing medical records, transcribing correspondence from machines and filing of correspondence, records and other data.

A Certificate will be awarded by the College upon completion of this program.

For more information, call the Medical Office and Records Department, 342-6965.

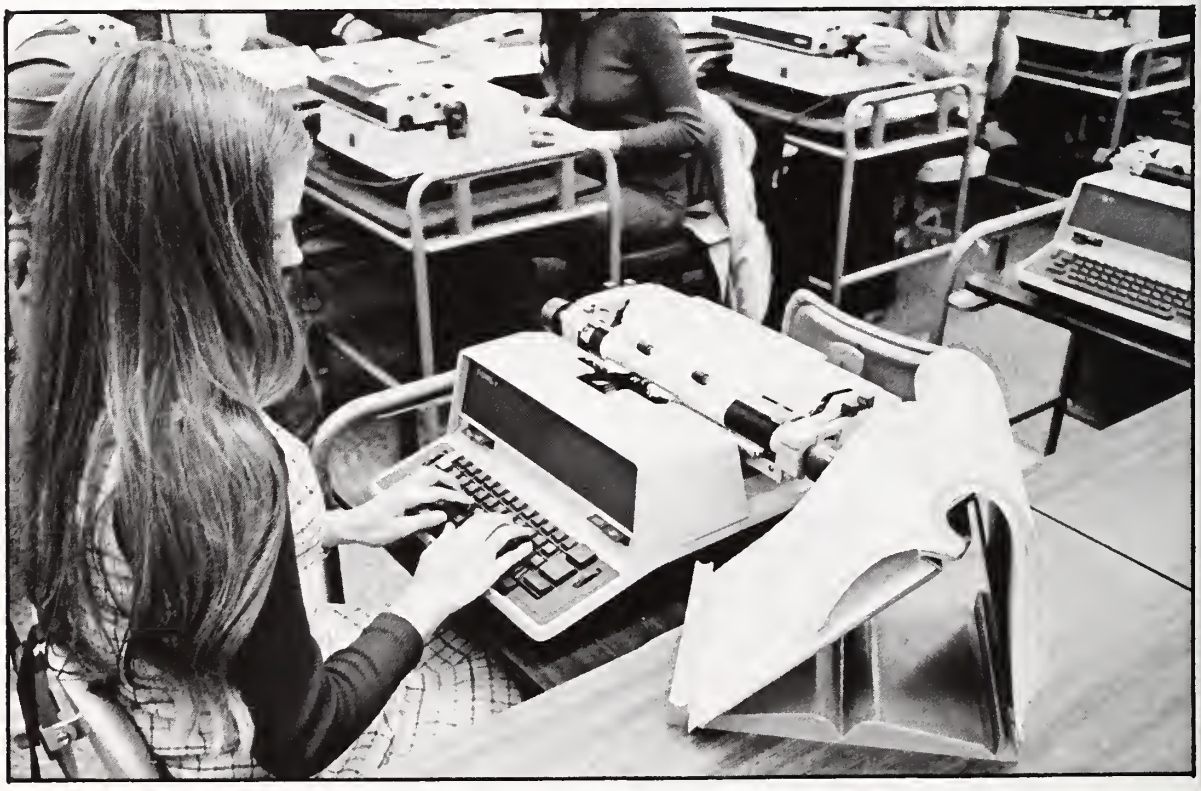
The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES:		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
*MET 3400	Introduction to Medical Transcription	2	4	0	4
*MET 3904	Transcription	4	10	0	9
*MET 3204	Medical Transcription Seminar	2	0	0	2
*MET 3505	Clinical Practice I	1	0	12	5
*MET 3406	Clinical Practice II	0	0	12	4
MED 3304	Medical Terminology I	3	0	0	3
*MED 3305	Medical Terminology II	3	0	0	3
*MED 3306	Medical Terminology III	3	0	0	3
SEC 3404	Typing I	3	2	0	4
*SEC 3405	Typing II	3	2	0	4
					41

RELATED COURSES:					
MED 3302	Medical Lab Fundamentals	2	2	0	3
*SEC 4426	Word Processing I	3	2	0	4
*MED 3214	Medical Office Administration I	2	0	0	2
*MED 3315	Medical Office Administration II	3	0	0	3
					12
GENERAL EDUCATION:					
COM 3515	Advanced Grammar	5	0	0	5
					5
Total Credit Hours					58

*Prerequisite or corequisite required; check course description.

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.



Nursing, Associate Degree (T109)

The Associate Degree Nursing curriculum is designed to prepare graduates to integrate the principles and theories of nursing and the sciences in utilizing the nursing process in the practice of nursing. The practice of nursing by associate degree nursing graduates consists of: (1) assessing the patient's physical and mental health, including the patient's reaction to illness and treatment regimens; (2) recording and reporting the results of the nursing assessment; (3) planning, initiating, delivering and evaluating appropriate nursing acts; (4) teaching, delegating to or supervising other personnel in implementing the treatment regimen; (5) collaborating with other health care providers in determining the appropriate health care for a patient; (6) implementing the treatment and pharmaceutical regimen prescribed by any person authorized by State law to prescribe such a regimen; (7) providing teaching and counseling about the patient's health care; (8) reporting and recording the plan for care, nursing care given and the patient's response to that care; and (9) supervising, teaching, and evaluating those who perform or are preparing to perform nursing functions.

Graduates are eligible to take the National Council Licensure Examination (NCLEX-RN) which is required for practice as a registered nurse.

On campus, the auto-tutorial method is used for teaching nursing theory. This method allows students to learn each week's work at their own pace and at a time that is personally convenient. Group and instructor interaction occurs during small assembly sessions. Periodic testing on stated behavioral objectives is conducted.

Admission to the program is in the Fall Quarter only, and is based upon satisfactory scores on specific entrance tests, personal interview, and evidence of good physical and mental health. Completion of a high school course in chemistry or its equivalent is required. Individuals desiring a career in registered nursing should also take biology and algebra courses prior to entering the program. Applicants must submit a completed high school transcript supporting their high school diploma, or other evidence of a high school education.

The Associate in Applied Science Degree—Nursing will be awarded by the College upon completion of this program.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIRST QUARTER				
*NUR 3704 Fundamentals of Nursing I	3	4	6	7
BIO 1504 Anatomy and Physiology I	3	4	0	5
PSY 2504 General Psychology	5	0	0	5
				17
SECOND QUARTER				
*NUR 3305 Nutrition for Nurses	3	0	0	3
*NUR 3805 Fundamentals of Nursing II	3	4	9	8
BIO 1505 Anatomy and Physiology II	3	4	0	5
HSA 3202 Crisis Intervention	2	0	0	2
				18
THIRD QUARTER				
*NUR 3904 Care of the Adult Patient I	3	4	12	9
*NUR 3216 Physical Assessment	2	0	0	2
*BIO 1503 Microbiology	3	4	0	5
				16
FOURTH QUARTER				
*NUR 3905 Care of the Adult Patient II	4	2	15	9
*COM 1304 Intro. to Communications	3	0	0	3
PSY 2514 Abnormal Psychology	5	0	0	5
				17
†FIFTH QUARTER				
‡*NUR 4614 Maternal-Neonatal Nursing	3	2	6	6
‡*NUR 4615 Psychiatric Nursing	3	2	6	6
*COM 1305 English Composition II	3	0	0	3
HED 1203 Cardiopulmonary Resuscitation (CPR)	2	0	0	2
				17
†SIXTH QUARTER				
*NUR 4915 Nursing of Children	3	2	15	9
*COM 1306 English Composition III	3	0	0	3
SOC 2514 Introduction to Sociology	5	0	0	5
				17
SEVENTH QUARTER				
*NUR 4606 Advanced Care of the Adult Patient	5	2	0	6
*NUR 4505 Nursing Practicum—Advanced Care	0	0	15	5
*NUR 4304 Nursing Perspectives	3	0	0	3
				14

Total credit hours 116

*Prerequisite or corequisite required; check course description.

†Sequence of Fifth and Sixth Quarters may be reversed for one-half of class.

‡5½ weeks each.

Nursing, Practical (V038)

Practical Nursing curriculum graduates are prepared to take the National Council Licensure Examination required to practice as a licensed practical nurse. The Practical Nursing curriculum is designed to develop competencies in practicing the following five components of practice as defined by the North Carolina *Nurse Practice Act,* 1981: (1) participating in assessing the client's physical and mental health including the client's reaction to illnesses and treatment regimens; (2) recording and reporting the results of the nursing assessment; (3) participating in implementing the health care plan developed by the registered nurse and/or prescribed by any person authorized by State law to prescribe such a plan, by performing tasks delegated by and performed under the supervision or under orders or directions of a registered nurse, physician licensed to practice medicine, dentist, or other person authorized by State law to provide such supervision; (4) reinforcing the teaching and counseling of a registered nurse, physician licensed to practice medicine in North Carolina, or dentist; and (5) reporting and recording the nursing care rendered and the client's response to that care.

Licensed practical nurses may be employed in hospitals, nursing homes, clinics, doctors' offices, industry, and public health agencies.

Individuals desiring a career in practical nursing should be encouraged to take math and science courses in high school.

Admission is based upon satisfactory scores on specific entrance tests, personal interview, and evidence of good physical and mental health. Applicants must submit a completed high school transcript or its equivalent. Students are admitted in the Fall Quarter each year.

A Diploma is awarded by the College upon completion of this program.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIRST QUARTER				
*NUP 5300 Basic Principles of Drug Administration	3	0	0	3
*NUP 5804 Introduction to Patient Care	6	4	0	8
*NUP 5204 Nursing Practicum—Basic Clinical Skills	0	0	6	2
BIO 3301 Basic Health Science I	3	0	0	3
HSA 5200 Human Relations	2	0	0	2
				18
SECOND QUARTER				
*NUP 5703 Care of Patients with Medical/Surgical Conditions I	5	4	0	7
*NUP 5502 Nursing Practicum I	0	0	15	5
*NUR 3305 Nutrition for Nurses	3	0	0	3
BIO 3302 Basic Health Science II	3	0	0	3
HED 1203 Cardiopulmonary Resuscitation (CPR)	2	0	0	2
				20
THIRD QUARTER				
NUP 5705 Care of Patients with Medical/Surgical Conditions II	5	4	0	7
*NUR 5602 Nursing Practicum II	0	0	18	6
COM 5500 Communications Skills	5	0	0	5
HSA 3421 Helping and Behavioral Stress	4	0	0	4
				22
FOURTH QUARTER				
*NUP 5406 Care of Infants and Children	3	2	0	4
*NUP 5302 Nursing Practicum III	0	0	9	3
*NUP 5407 Care of Mothers and Newborn Infants	3	2	0	4
*NUP 5303 Nursing Practicum IV	0	0	9	3
NUP 5304 Nursing Seminar	3	0	0	3
				17
Total Credit Hours				77

*Prerequisite or corequisite required; check course description.

Nursing Assistant (V072)

The Nursing Assistant curriculum prepares graduates to assist registered and practical nurses and physicians in carrying out nursing care and services to patients. The nursing assistant performs simple health care procedures such as bathing and feeding patients, providing comfort measures, positioning patients, preparing patients for physical examinations and special tests, observing and recording vital signs, admitting, transferring and discharging patients, and collecting specimens.

Graduates may be employed in hospitals, clinics, doctors' offices, nursing homes and extended care facilities.

Individuals desiring a career as nursing assistant should, if possible, take English, biology and social science courses prior to entering the program.

Graduates from this program will be awarded a Certificate of completion.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
*NUA 5806	Nurse Assistant Skills I	5	0	9	8
*NUA 5807	Nurse Assistant Skills II	5	0	9	8
Total Credits					16

*Prerequisite or corequisite required; check course description.

Paralegal Technician (T120)

CPCC has a transfer agreement for this program with Wingate College and the University of North Carolina at Charlotte. Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The Paralegal Technology curriculum trains individuals to work under the general direction of lawyers, to relieve lawyers of routine matters, and to assist them in the conduct of more complicated and difficult tasks. The legal technician should be capable of doing independent legal work under the supervision of a lawyer, supervise secretaries in their work for the lawyer, and search out information and court facts for the lawyer. Training will include general subjects such as English, accounting and psychology, as well as specialized legal courses such as Legal Definitions, Court Systems, Laws and Techniques of Investigation.

Graduates of the Paralegal Technology curriculum should be able to directly assist a lawyer or group of lawyers in most facets of law, but they must always work under the supervision of a lawyer. The legal technician will not be qualified to give legal advice, enter into courtroom procedure, or be involved in litigation except as an assistant to the lawyer. Paralegal graduates will be able to assist in work on probate matters, conducting investigations, searching public records, preparation of tax forms, serving and filing legal documents, bookkeeping, library research, and providing office management assistance. Employment opportunities are available in public and private law firms, and with individual lawyers.

The Associate in Applied Science Degree—Paralegal Technician will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6610/6921, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
LEX	3300	Case Analysis and Reasoning	3	0	3
LEX	3310	North Carolina Legal Systems	2	2	3
LEX	3320	Evidence	3	0	3
LEX	3404	Legal Research	2	4	4
LEX	3405	Legal Writing	3	2	4
LEX	4300	Domestic Relations Law	3	0	3
LEX	4321	Tort Law	3	0	3
LEX	4322	Corporate Law	3	0	3
LEX	4331	Law Office Management	3	0	3
*LEX	4332	Trial Preparation and Procedures	3	0	3
LEX	4361	Interpreting Medical Reports	3	0	3
LEX	4410	Collections and Bankruptcy	3	2	4
LEX	4420	Real Property Law and Title Abstracting	3	2	4
*LEX	4430	Wills, Trusts and Probate	3	2	4
*LEX	4431	Interview and Investigation	3	2	4
*LEX	4434	Legal Drafting *or*	3	2	4
LEX	4520	Legal Ethics & Comprehension	5	0	5
PSC	3510	Criminal Law	5	0	5
PSC	4501	Constitutional Law	5	0	5
					70

RELATED COURSES:					
ACC	1604	Principles of Accounting	5	2	6
BUS	2304	Business Law I	3	0	3
*BUS	2305	Business Law II	3	0	3
EDP	3310	Microcomputer Operations	2	2	3
SEC	3301	Legal Terminology and Vocabulary	3	0	3
†SEC	3404	Typing I	3	2	4
SEC	4426	Word Processing I	3	2	4
					26

GENERAL EDUCATION:					
*COM	1304	Intro. to Communications	3	0	3
*COM	3305	Communications II	3	0	3
*COM	3306	Communications III	3	0	3
POL	1502	American Politics	5	0	5
PHI	2500	Logic	5	0	5
SPH	1301	Persuasive Speaking	3	0	3
					22
†		Elective	3	0	3
Total Credit Hours					121

*Prerequisite or corequisite required; check course description.

†Elective: Choose three hours after consultation with program counselor.

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Pharmacy Technology (T161)

The Pharmacy Technology curriculum prepares pharmacy technicians to transcribe physicians' medication orders, fill orders to be checked by pharmacists, deliver orders, prepare admixtures of intravenous solutions, maintain control drug distribution, price and order drugs, prepare bulk formulations, replenish pharmaceutical supplies and medications on patient care units, file prescriptions, maintain patient profile records and perform clerical duties.

Graduates may be employed in hospital and nursing home pharmacies, in private and chain drug stores, by drug manufacturers and in wholesale drug companies.

Individuals desiring a career in pharmacy technology should, if possible, take biology, algebra, chemistry and typing courses prior to entering the program.

A Certificate will be awarded by the College upon completion of this program.

For more information, call the Medical Office and Records Department, 342-6965.

The first step to enroll: call the Admissions Center, 342-6687.

MAJOR COURSES:		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
PHM 5301	Pharmacology I	3	0	0	3
PHM 5302	Hospital Pharmacy I	2	2	0	3
*PHM 5306	Pharmacology II	3	0	0	3
*PHM 5303	Hospital Pharmacy II	2	2	0	3
PHM 5404	Pharmacy Math	4	0	0	4
*PHM 5208	Hospital Practicum I	0	0	6	2
*PHM 5505	Hospital Practicum II	1	0	12	5
*PHM 5406	Hospital Practicum III	0	0	12	4
PHM 5204	Community Pharmacy	2	0	0	2
					29

RELATED COURSES:					
MED 3302	Medical Lab Fundamentals	2	2	0	3
MED 3304	Medical Terminology I	3	0	0	3
SEC 3404	Typing I	3	2	0	4
EDP 5201	CRT Use in Business Applications	2	0	0	2
MED 4302	Medical Ethics and Law	3	0	0	3
HRC 5300	Professional Interactions and the Health Worker	3	0	0	3
					18

Total Credit Hours 47

*Prerequisite or corequisite required; check course description.

NOTE: During the admissions process, students are encouraged to obtain a course sequence list from the program counselor.

Physical Therapist Assistant (T062)

The Physical Therapist Assistant curriculum prepares the graduate to assist the professional physical therapist in a variety of direct patient care services, delegated by the supervising therapist, to restore function by alleviation or prevention of physical impairment, and other activities essential to the operation of a physical therapy service. The graduate is eligible to take the licensing examination given by the North Carolina Board of Physical Therapy Examiners.

Employment opportunities are available in general hospitals, rehabilitation centers, extended care facilities, specialty hospitals, home health agencies, private clinics, and public school systems.

Suggested preparatory courses for individuals desiring a career in physical therapy assisting would include biology, algebra, and possibly chemistry.

The Associate in Applied Science Degree—Physical Therapist Assistant is awarded by the College upon completion. This program is accredited by the American Physical Therapy Association.

For more information on required placement tests or answers to questions, call the program director, (704) 342-6505, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIRST QUARTER					
BIO 1504	Human Anatomy and Physiology I	3	4	0	5
PSY 2504	General Psychology	5	0	0	5
MED 3304	Medical Terminology and Vocabulary I	3	0	0	3
HED 1203	Cardiopulmonary Resuscitation	2	0	0	2
*PTH 3604	Introduction to Physical Therapy	3	6	0	6
†Elective					
SECOND QUARTER					
BIO 1505	Human Anatomy and Physiology II	3	4	0	5
*COM 1304	Introd. to Communications	3	0	0	3
*PTH 3624	Physical Therapy Procedures I	3	6	0	6
*PTH 3615	Applied Anatomy	3	6	0	6
†Elective					
THIRD QUARTER					
*COM 1305	English Composition II				
	OR				
*COM 3305	Communications II	3	0	0	3
*PTH 3526	Clinical Problems in Physical Therapy	5	0	0	5
*PTH 3525	Physical Therapy Procedures II	3	0	6	5
*PTH 3714	Therapeutic Exercise	3	8	0	7
†Elective					
FOURTH QUARTER					
*COM 1306	English Composition III				
	OR				
*COM 3306	Communications III	3	0	0	3
*PTH 4627	Physical Therapy Procedures III	3	0	9	6
*PTH 4324	Psychology of Adjustment	3	0	0	3
†	Elective				
FIFTH QUARTER					
SPH 1300	Oral Communication	3	0	0	3
*PTH 4728	Physical Therapy Procedures IV	3	0	12	7
*PTH 4334	Community Health and Welfare	3	0	0	3
†Elective					
SIXTH QUARTER					
*PTH 4344	Seminar in Physical Therapy Procedures	3	0	0	3
*PTH 4604	Clinical Education I	0	0	18	6
*PTH 4605	Clinical Education II	0	0	18	6

Total Credit Hours 110

*Prerequisite or corequisite required; check course description.

†9 to 10 credit hours in electives are required in addition to the courses listed, 5 credit hours of which *MUST* be in social sciences and/or humanities, and which should be taken in any of the first five quarters.

Piano Tuning and Repair (V118)

According to the American Music Conference, there are fifteen million pianos in the United States. At any given time, 95% of these are out of tune. For the trained piano technician this is an untapped market for a challenging career.

The program is designed to equip students with the basic skills essential to building a clientele of customers who have their pianos tuned. The curriculum provides the practical, hands-on experience in refelting, regulating, repair or replacement of parts and the aural method of tuning. To play the piano is not necessary; in fact, to play other instruments or choral experience is even more desirable. The nature of the profession demands that students be meticulous, patient and persistent.

A Diploma will be awarded to students successfully completing 73 credit hours. The student will receive a certificate for completing less than 73 credit hours.

For more information or answers to questions, call the Program Director, (704) 342-6618, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER					
MUS	1154	Class Piano I	0	3	1
PTR	5300	Piano Technology—The Instrument and Tools	3	0	3
PTR	5210	Piano Actions	0	6	2
PTR	5607	Fundamentals of Tuning I	2	12	6
PTR	5200	Piano Service Seminar	2	0	2
EDP	5300	Microcomputer Operations	2	2	3
					17
SECOND QUARTER					
PTR	5608	Fundamentals of Tuning II	2	12	6
PTR	5211	Vertical Regulation	1	3	2
PTR	5212	Hammer Replacement	1	3	2
PTR	5200	Piano Service Seminar	2	0	2
COM	5500	Communication Skills	5	0	5
					17
THIRD QUARTER					
PTR	5213	Grand Regulation	1	3	2
PTR	5709	Intermediate Tuning	3	12	7
PTR	5214	Restringing	1	3	2
PTR	5200	Piano Service Seminar	2	0	2
BUS	3300	Human Relations	3	0	3
					16
FOURTH QUARTER					
PTR	5710	Advanced Tuning	3	12	7
PTR	5200	Piano Service Seminar	2	0	2
ART	1314	Basic Woodworking	0	6	3
MGT	5200	Shop Management	2	0	2
PTR	5301	Piano Technology—The Technician	3	0	3
					17
FIFTH QUARTER—Piano Restoration (Optional)					
ART	1317	Furniture Restoration I	0	6	3
PTR	5330	Tuning Practicum	0	9	3
					6
Total Credit Hours					73

Postal Service Technology (T141)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to a senior institution.

The Postal Service Technology curriculum is designed to provide opportunities for advancement for present and future employees of the U.S. Postal Service. Graduates of the program will be prepared to work in a variety of positions. The course of study includes: postal organization, mail processing, employee and customer services, mail delivery and collection, problem analysis, related business/management subjects and general education courses.

The Associate in Applied Science Degree—Postal Service Technology will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program, director, (704) 342-6646, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
BUS 2304 Business Law I	3	0	3
BUS 3300 Human Relations	3	0	3
*COM 1304 Intro. to Communications	3	0	3
‡FIN 3314 Business Mathematics I	3	0	3
PSM 3300 Postal Service History and Organization	3	0	3
Elective	3	0	3
			18
SECOND QUARTER			
‡*COM 3305 Communications II	3	0	3
ECO 2304 Economics I	3	0	3
‡FIN 3315 Business Mathematics II	3	0	3
PSM 3401 Postal Service Labor Management	3	2	4
PSM 4420 Postal Employee Services	3	2	4
			17
THIRD QUARTER			
ACC 1604 Principles of Accounting I	5	2	6
*BUS 2305 Business Law II	3	0	3
‡*COM 3306 Communications III	3	0	3
*ECO 2305 Economics II	3	0	3
PSM 3404 Mail Processing I	3	2	4
			19
FOURTH QUARTER			
*ACC 1605 Principles of Accounting II	5	2	6
PSM 3405 Mail Processing II	3	2	4
PSM 4401 Postal Service (Support) Finance	3	2	4
SPH 1300 Oral Communications	3	0	3
			17
FIFTH QUARTER			
EDP 1500 Computer Literacy	5	0	5
*MGT 2314 Principles of Management	3	0	3
PSM 4421 Postal Customer Services	3	2	4
PSM 4430 Postal Delivery and Collection	3	2	4
SOC 1301 Group Interaction	3	0	3
			19
SIXTH QUARTER			
EDP 3324 Advanced Microcomputer Operations	2	2	3
FIN 4334 Business Finance I	3	0	3
MGT 4330 Supervision	3	0	3
PSM 4431 Postal Problem Analysis	3	2	4
Elective	3	0	3
			16
Total Credit Hours			106

*Prerequisite or corequisite required; check course description.
‡MAT 1504, MAT 1505, MAT1514, COM 1305, COM 1306 may be taken if student has met requirements.

Real Estate (T127)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to a senior institution.

The purpose of the Real Estate curriculum is to prepare the individual to enter the real estate industry, provide an educational program for persons directly involved in various phases of the real estate industry, and provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through a thorough introduction to real estate principles, practices, industry ethics, finance, law, appraisal techniques and trends.

The curriculum will provide the opportunity for an individual to enter public or private employment in real estate areas such as sales, finance, development, market analysis, valuation and property management. Advanced real estate job opportunities are available in areas such as brokerage, management, appraising or consulting.

The Associate in Applied Science Degree—Real Estate will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6562, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
BUS 1400	Introduction to Business	3	2	4
*COM 1304	Introd. to Communications	3	0	3
‡FIN 3314	Business Mathematics I	3	0	3
SPH 1300	Oral Communications	3	0	3
RES 3660	Fundamentals of Real Estate (Salesman Prelicensing)	6	0	6
				19
SECOND QUARTER				
ACC 1604	Principles of Accounting I	5	2	6
‡*COM 3305	Communications II	3	0	3
‡*FIN 3315	Business Mathematics II	3	0	3
*RES 4361	Real Estate Law (Broker Prelicensing)	3	0	3
*RES 4362	Real Estate Finance (Broker Prelicensing)	3	0	3
				18
THIRD QUARTER				
*ACC 1605	Principles of Accounting II	5	2	6
‡*COM 3306	Communications III	3	0	3
ECO 2304	Economics I	3	0	3
*RES 4363	Real Estate Brokerage Operations (Broker Prelicensing)	3	0	3
*RES 4365	Building a Successful Real Estate Career	3	0	3
				18
FOURTH QUARTER				
ARC 3302	Home Construction Methods and Details	3	0	3
BUS 2304	Business Law I	3	0	3
BUS 3300	Human Relations	3	0	3
*ECO 2305	Economics II	3	0	3
*MGT 2314	Principles of Management	3	0	3
*RES 3360	Real Estate Property Management	3	0	3
*RES 3364	Residential Real Estate Appraisal I	3	0	3
				21
FIFTH QUARTER				
*BUS 2305	Business Law II	3	0	3
*BUS 3304	Business Statistics	3	0	3
EDP 3310	Microcomputer Operations	3	0	3
*RES 3365	Residential Real Estate Appraisal II	3	0	3
*RES 4367	Income Real Estate Appraisal I	3	0	3
*RES 4374	Real Estate Investment Analyses and Computer Techniques	3	0	3
				18
SIXTH QUARTER				
*BUS 2306	Business Law III	3	0	3
MGT 3303	Small Business Management	3	0	3
*RES 4364	Government Land Use Controls in Brokerage	3	0	3
*RES 4368	Income Real Estate Appraisal II	3	0	3
*RES 4369	Commercial Real Estate Finance	3	0	3
*RES 4375	Commercial and Industrial Real Estate	3	0	3
Elective(s)		3	0	3
				21

Total Credit Hours 115

*Prerequisite or corequisite required; check course description.
‡MAT 1504, MAT 1505, MAT 1514, MAT 1515, COM 1304, COM 1306 may be taken if student has met requirements.

Recreation Associate (T094)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to a senior institution.

The Recreation Associate curriculum trains individuals to plan and direct recreational activities for all age groups. The program is divided to meet the needs of those who work with the following categories of people and facilities: pre-school; school age; adults; senior citizens; public and private recreational sites and facilities. Practical administration will be provided in all areas of instruction.

Employment opportunities for professionally trained leaders exist in: community programs, projects of local governments, YMCA's, YWCA's, boys' clubs, Boy Scouts, Girl Scouts, hospitals, nursing homes, penal institutions, state parks, federal parks, industry, public and private resorts, summer camps, rehabilitation programs, and regional institutions.

The Associate in Applied Science Degree—Recreation will be awarded by the College upon completion of this program.

For more information or answers to questions, call (704) 342-6937, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
HPE 1404	Intro. to Recreation Services	3	3	4
*COM 1304	Intro. to Communications	3	0	3
HPE 1504	Relays, Games and Team Sports	3	6	5
HED 1300	Intro. to Health Education	3	0	3
†Elective	Major Course			4
		12	9	19
SECOND QUARTER				
HED 1204	Standard First Aid	1	2	2
‡FIN 3314	Business Math I	3	0	3
*COM 1305	English Composition II	3	0	3
HED 1208	Personal Fitness Analysis	1	2	2
ART 1364	Ceramics I	0	6	3
HED 1203	CPR	2	0	2
†Elective	General Education			3
		10	10	18
THIRD QUARTER				
SOC 1301	Group Interaction	3	0	3
BIO 1504	Human Anatomy & Physiology I	3	4	5
HPE 1214	Water Activities I	1	3	2
HPE 2315	Recreational Scheduling	2	3	3
HOR 3504	Grounds Maintenance I	3	4	5
HPE 1186	Swimming Intermediate	0	3	1
		12	17	19
FOURTH QUARTER				
SPH 1300	Oral Communications	3	0	3
HED 2204	Prevention and Treatment of Injuries in Recreation	1	2	2
HPE 2445	Principles of Physical Fitness	3	3	4
BIO 1505	Human Anatomy & Physiology II	3	4	5
HPE 1188	Swimming—Lifesaving	0	3	1
†Elective				3
		10	12	18
FIFTH QUARTER				
HPE 2424	Program Planning and Organization	3	3	4
BUS 3300	Human Relations	3	0	3
HPE 2434	Recreation and Special Populations	3	3	4
HOR 3410	Turf Management	2	4	4
HPE 1189	Water Safety Instructor	0	3	1
†Elective	Related Course			3
		11	13	19
SIXTH QUARTER				
HPE 2200	Sports Officiating	1	3	2
HPE 2325	Intro. to Outdoor Recreation	2	3	3
HPE 1200	Creative Arts in Recreation	1	3	2
HPE 1215	Lifeguard Training	1	3	2
†Elective	General Education			3
		7	15	15

Total Credit Hours 108

*Prerequisite or corequisite required; check course description.

†**ELECTIVES:**

Major Courses—
- HPE 1123 Physical Fitness—Beginning
- HPE 1190 Introduction to Golf I
- HPE 1147 Tennis—Beginning
- HPE 2212 Canoeing—Basic

Related Courses—
Three hours can be chosen from:
- ART 1365 Ceramics II
- ART 1384 Basic Camera Techniques
- DAN 1183 Introduction to Modern Dance
- HSA 5200 Human Relations
- MKT 4321 Advertising

General Education Courses—
Six hours can be chosen from:
- *COM 1306 English Composition III
- COM 1324 Creative Writing
- SPH 2304 Public Speaking
- PSY 2504 General Psychology

‡MAT 1504, MAT 1505, or MAT 1514, MAT 1515 may be taken if student has met requirements.

Respiratory Therapy Technology (T091)

The Respiratory Technology curricula offer career education options for respiratory therapists and/or respiratory therapy technicians.

The respiratory therapist specializes in the application of scientific knowledge and theory to practical, clinical problems of respiratory care. Knowledge and skills for performing these functions are usually achieved through two or more years of academic and clinical preparation. The respiratory therapist is qualified to assume primary clinical responsibility for all respiratory care modalities, including responsibilities involved in supervision of respiratory technician functions. The therapist is frequently required to exercise considerable independent, clinical judgment in the respiratory care of patients under the direct or indirect supervision of a physician. Further, the therapist is capable of serving as a technical resource person to the physician with regard to current practices in respiratory care, and to the hospital staff as to effective and safe methods for administering respiratory care.

The technician's role does not require the exercising of independent, clinical judgment; however, the technician is expected to adjust or modify therapeutic techniques within well-defined procedures based on a limited range of patient responses. Therefore, the effective use of the technician, especially in the critical care setting, requires the supervision of a respiratory therapist or a physician experienced in respiratory care. Knowledge and skills for performing these functions are usually achieved through one or more years of academic and clinical preparation.

Graduates of the technician and therapist curricula are eligible to apply for admission to the Entry Level Respiratory Therapy Practitioner (CRTT) examination by the National Board for Respiratory Care. Graduates of the therapist level curriculum are eligible to apply for admission to the Advanced Respiratory Care Practitioner (RRT) examination.

Graduates may be employed in a wide variety of health related areas including hospitals (in respiratory therapy, special services, cardiopulmonary, anesthesiology, or pulmonary medicine departments), respiratory equipment sales and rental companies, rehabilitation centers, skilled nursing care facilities, and educational and research institutions.

Individuals desiring a career in respiratory therapy technology should take biology, algebra and chemistry courses prior to entering the program.

The program, which begins each Fall, is accredited by the American Medical Association and the Associate in Applied Science Degree—Respiratory Therapy Technology will be awarded by the College upon completion of this program. Placement tests are required prior to program entry and early application is advisable.

The Associate in Applied Science Degree—Respiratory Therapy Technology wwill be awarded by the College upon completion of the program.

NOTE: The The CPCC program is for the Respiratory Therapist, not Technician.

The first step to enroll: call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CLC /WK	HRS CR/ QTR
FIRST QUARTER						
‡BIO	1504	Anatomy and Physiology I	3	4	0	5
*†MAT	3504	Technical Mathematics	5	0	0	5
*RTH	3807	Introduction to Respiratory Therapy	4	4	6	8
*RTH	3202	Introduction to Pathology and Physical Diagnosis	2	0	0	2
SECOND QUARTER						
‡BIO	1505	Anatomy and Physiology II	3	4	0	5
*RTH	3305	Respiratory Pharmacology	3	0	0	3
*RTH	3304	Pathology and Physical Diagnosis	2	2	0	3
*RTH	3714	Respiratory Therapy Procedures I	2	4	9	7
THIRD QUARTER						
‡BIO	3404	Cardiopulmonary Anatomy and Physiology	3	2	0	4
‡BIO	1503	Microbiology	3	4	0	5
*RTH	3805	Respiratory Therapy Procedures II	3	4	9	8
§Elective						
FOURTH QUARTER						
‡PHY	3414	Physics of Respiratory Therapy	3	2	0	4
*†‡CHM	1501	Chemistry for the Health Professions I	3	4	0	5
*RTH	4814	Introd. to Emergency and Intensive Resp. Care	4	2	9	8
*RTH	4415	Equipment for Continuous Ventilation	3	2	0	4
FIFTH QUARTER						
*†COM	1304	Intro. to Communications	3	0	0	3
*RTH	4417	Neonatal and Pediatric Respiratory Care	2	0	6	4
*RTH	4724	Continuous Ventilation	3	0	12	7
*PTH	4324	Psychology of Adjustment	3	0	0	3
§Elective						

(continued)

SIXTH QUARTER

*‡COM	3305	Communications II	3	0	3
*RTH	4504	Pulmonary Functions I	2	0	9	5
*RTH	4605	Pulmonary Functions II	2	2	9	6
‡ SPH	1300	Oral Communications	3	0	0	3
§Elective						

SEVENTH QUARTER

*†‡COM	3306	Communications III	3	0	3
*RTH	4606	Clinical Application I	2	0	12	6
*RTH	4607	Clinical Application II	2	0	12	6
§Elective						

Total Credit Hours 128

*Prerequisite or corequisite required; check course description.
§Three credit credit hours required in communications, social science or humanities. May be taken any of these quarters.
†MAT 1504, PHY 1404, COM 1505, COM 1506, and CHM 1506 are recommended for students who may later decide to transfer to a senior institution.
‡May be taken before quarter required.

Secretary, Executive (T030)

The purposes of the Secretarial-Executive curriculum are to: (1) prepare the individual to enter the secretarial profession, (2) provide an educational program for individuals wanting education for upgrading (moving from one secretarial position to another) or retraining (moving from present position to secretarial position), and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of typewriting, shorthand, transcription and business machines. Through these skills the individual will be able to perform office-related activities and through the development of personal competencies and qualities will be provided the opportunity to enter the secretarial profession.

The Associate in Applied Science Degree—Executive Secretary will be awarded by the College upon completion of this program.

Credit by examination for all SEC courses can be arranged by contacting the department head. A suggested sequence of required courses for full-time students is listed below. (Course sequence sheets for part-time and evening students are available from the department head or in the Secretarial lab.) For more information or answers to questions, call 342-6781, weekdays, 8 a.m. to 5 p.m. or 342-6889 after 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

	HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER			
SEC 3404 Typing I	3	2	4
SEC 3302 Effective Word Techniques	3	0	3
FIN 3314 Business Mathematics I	3	0	3
SEC 3320 Personal Projections	3	0	3
BUS 1400 Introduction to Business	3	2	4
EDP 3310 Microcomputer Operations	3	0	3
			20
SECOND QUARTER			
*SEC 3414 Shorthand I	3	2	4
*SEC 3405 Typing II	3	2	4
*FIN 3315 Business Mathematics II	3	0	3
SEC 3305 Editing, Proofreading, and Reference Skills	3	0	3
*SEC 3304 Office Machines	2	2	3
BUS 2304 Business Law I	3	0	3
			20
THIRD QUARTER			
*SEC 3415 Shorthand II	3	2	4
*SEC 3406 Typing III	3	2	4
*SEC 4426 Word Processing I	3	2	4
SEC 4370 Records Management	3	0	3
*COM 3515 Advanced Grammar	5	0	5
			20
FOURTH QUARTER			
*COM 1304 Introd. to Communications	3	0	3
*SEC 4407 Typing IV	3	2	4
*SEC 4425 Machine Transcription	3	2	4
*SEC 3416 Shorthand III	3	2	4
†Elective(s) General Education	4	0	4
			19

FIFTH QUARTER			
*SEC 4305 Business Communications	3	0	3
*SEC 4427 Word Processing II	3	2	4
MGT 4331 Administrative Office Management	3	0	3
SPH 1300 Oral Communications	3	0	3
BUS 3300 Human Relations	3	0	3
*SEC 4201 Secretarial Coop. Experience I *or* Course approved by dept. head	2	0	2
			18
SIXTH QUARTER			
*SEC 4517 General Office Procedure	5	0	5
ACC 3600 General Accounting *or* ACC 1604 Principles of Accounting I	5	2	6
ECO 3300 Introduction to Economics	3	0	3
†Elective Technical	4	0	4
			18
Total Credit Hours			115

*Prerequisite or corequisite required; check course description.

†ELECTIVES:

General Education—COM, SPH, PSY, SOC, ECO, POL, or HIS prefixes.

Technical—Students will select 4 hours from the following courses: SEC 4417-Shorthand IV; SEC 4400-Typing Skill Building; SEC 4202-Secretarial Cooperative Experience II; SEC 3311-Receptionist Skills.

Secretary, Legal (T031)

The purposes of the Secretarial-Legal curriculum are to: (1) prepare the individual to enter the legal secretarial profession through work in a lawyer's office, in city, county, state or government offices, (2) provide an educational program for individuals wanting education for upgrading (moving from one legal secretarial position to another) and, (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of legal typewriting, shorthand transcription and business machines. Through these skills the individual will be able to perform legal, office-related activities and through the development of personal competencies and qualities will be provided the opportunity to enter the legal secretarial profession.

The Associate in Applied Science Degree—Legal Secretary will be awarded by the College upon completion of this program.

Credit by examination for all SEC courses can be arranged by contacting the department head. A suggested sequence of required courses for full-time students is listed below. (Course sequence sheets for part-time and evening students are available from the department head or in the Secretarial lab.) For more information or answers to questions, call 342-6781, weekdays, 8 a.m. to 5 p.m. or 342-6889 after 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
SEC 3404	Typing I	3	2	4
SEC 3301	Legal Terminology and Vocabulary	3	0	3
SEC 4370	Records Management	3	0	3
COM 3515	Advanced Grammar	5	0	5
BUS 2304	Business Law I	3	0	3
				18
SECOND QUARTER				
*SEC 3405	Typing II	3	2	4
SEC 3414	Shorthand I	3	2	4
FIN 3314	Business Mathematics I	3	0	3
BUS 2305	Business Law II	3	0	3
*COM 1304	Intro. to Communications	3	0	3
SPH 2101	Parliamentary Procedures	1	0	1
				18
THIRD QUARTER				
*SEC 3406	Typing III	3	2	4
*SEC 3415	Shorthand II	3	2	4
SEC 3305	Editing, Proofreading, and Reference Skills	3	0	3
*SEC 4426	Word Processing I	3	2	4
SPH 2300	Voice and Diction	3	0	3
				18
FOURTH QUARTER				
*SEC 4409	Legal Typing	3	2	4
*SEC 3416	Shorthand III	3	2	4
*SEC 4427	Word Processing II	3	2	4
ACC 1604	Principles of Accounting I *or*	5	2	6
ACC 3600	General Accounting	5	2	6
				18

FIFTH QUARTER				
*SEC 4305	Business Communications	3	0	3
*SEC 4448	Legal Shorthand	3	2	4
*SEC 4517	General Office Procedures	5	0	5
*SEC 3304	Office Machines	2	2	3
LEX 4331	Law Office Management *or*			
MGT 4331	Administrative Office Management	3	0	3
				18
SIXTH QUARTER				
*SEC 4425	Machine Transcription	3	2	4
BUS 3300	Human Relations	3	0	3
EDP 3310	Microcomputer Operations	3	0	3
SPH 1300	Oral Communications	3	0	3
†Elective	General Education	3	0	3
†Elective	Related	3	0	3
				19

Total Credit Hours 109

*Prerequisite or corequisite required; check course description.

†**ELECTIVES:**

General Education—COM, SPH, PSY, SOC, ECO, POL, or HIS prefixes.

Related—ACC, LEX, BUS, EDP, or FIN prefixes.

Secretary, Medical (T032)

The purposes of the Secretarial-Medical curriculum are to: (1) prepare the individual to enter the medical secretarial profession through work in a doctor's office, in city, county, state or government offices, (2) provide an educational program for individuals wanting education for upgrading (moving from one medical secretarial position to another) or retraining (moving from present position to a medical secretarial position), and (3) provide an opportunity for individuals wanting to fulfill professional or general interest needs.

These purposes will be fulfilled through skill development in the areas of medical typewriting, shorthand transcription and business machines. Through these skills the individual will be able to perform medical, office-related activities and through the development of personal competencies and qualities will be provided the opportunity to enter the medical secretarial profession.

The Associate in Applied Science Degree—Medical Secretary will be awarded by the College upon completion of this program.

Credit by examination for all SEC courses can be arranged by contacting the department head. A suggested sequence of required courses for full-time students is listed below. (Course sequence sheets for part-time and evening students are available from the department head or in the Secretarial lab.) For more information or answers to questions, call 342-6781, weekdays, 8 a.m. to 5 p.m. or 342-6889 after 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
SEC 3305	Editing, Proofreading, and Reference Skills	3	0	3
SEC 3404	Typing I	3	2	4
BIO 3301	Basic Health Science I	3	0	3
MED 3304	Medical Terminology and Vocabulary I	3	0	3
*COM 1304	Introd. to Communications	3	0	3
SPH 1300	Oral Communications	3	0	3
				19
SECOND QUARTER				
*COM 3515	Advanced Grammar	5	0	5
*SEC 3405	Typing II	3	2	4
FIN 3314	Business Mathematics I	3	0	3
*MED 3305	Medical Terminology and Vocabulary II	3	0	3
BIO 3302	Basic Health Science II	3	0	3
				18
THIRD QUARTER				
SEC 3302	Effective Word Techniques	3	0	3
*SEC 3406	Typing III	3	2	4
*SEC 3304	Office Machines	2	2	3
SEC 4370	Records Management	3	0	3
*MED 3306	Medical Terminology and Vocabulary III	3	0	3
*FIN 3315	Business Mathematics II	3	0	3
				19
FOURTH QUARTER				
*SEC 4416	Medical Typing	3	2	4
SPH 2300	Voice and Diction	3	0	3
*SEC 4426	Word Processing I	3	2	4
*SEC 4305	Business Communications	3	0	3
*SEC 4425	Machine Transcription	3	2	4
				18

FIFTH QUARTER				
MED 4302	Medical Ethids and Law	3	0	3
BUS 3300	Human Relations	3	0	3
*SEC 4427	Word Processing II	3	2	4
*SEC 4517	General Office Procedures	5	0	5
*SEC 3424	Medical Transcription I *or*			
*MET 3400	Introduction to Medical Transcription	3	2	4
				19
SIXTH QUARTER				
EDP 3310	Microcomputer Operations	3	0	3
MGT 4331	Administrative Office Management	3	0	3
ACC 3600	General Accounting *or*			
ACC 1604	Principles of Accounting I	5	2	6
*SEC 4201	Secretarial Coop. Experience I	2	0	2
†Elective	General Education	4	0	4
				18

Total Credit Hours 111

*Prerequisite or corequisite required; check course description.

†**ELECTIVES:**

General Education—COM, SPH, PSY, SOC, ECO, POL, or HIS prefixes.

Major—SEC prefixes.

Related—ACC, BAF, BUS, EDP, FIN, INS or MGT prefixes.

Traffic and Transportation (T034)

Students should consult with a faculty adviser or program counselor regarding transferability of this program to senior institutions.

The Traffic and Transportation curriculum is designed to provide an educational program in the techniques of state and federal laws and regulations applicable to traffic and transportation which will prepare students to enter such careers as dispatcher, claim clerk, rate clerk, operational clerk, dock supervisor and loading supervisor and moving counselor. Objectives of this curriculum are to develop knowledge and skills in the principles of organization and management in the traffic and transportation industry, the Interstate Commerce Act and other related traffic and transportation acts, the communication responsibilities of traffic and transportation and the role and influence of traffic and transportation on the economy.

The Associate in Applied Science Degree—Traffic and Transportation will be awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6646, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

			HRS CLS /WK	HRS LAB /WK	HRS CoOp /WK	HRS CR/ QTR
BUS	1400	Introduction to Business	3	2	0	4
BUS	2304	Business Law I	3	0	0	3
*BUS	2305	Business Law II	3	0	0	3
*MGT	2314	Principles of Management	3	0	0	3
TRN	3300	Intro. to Transportation	3	0	0	3
TRN	3303	Economic Theory and Regulatory History	3	0	0	3
TRN	3350	Highway Transportation	3	0	0	3
TRN	3351	Traffic Management	3	0	0	3
TRN	3360	Transportation Rates	3	0	0	3
TRN	4351	Freight Claims	3	0	0	3
TRN	4356	Physical Distribution Management	3	0	0	3
ACC	1604	Principles of Accounting I	5	2	0	6
*ACC	1605	Principles of Accounting II	5	2	0	6
BUS	3304	Business Statistics	3	0	0	3
EDP	1300	Computer Literacy	5	0	0	5
EDP	4314	Systems and Procedures	3	0	0	3
FIN	3314	Business Mathematics I	3	0	0	3
FIN	3315	Business Mathematics II	3	0	0	3
FIN	4336	Financial Management	3	0	0	3
SPH	1300	Oral Communications	3	0	0	3
SOH	1301	Persuasive Speaking	3	0	0	3
BUS	3300	Human Relations	3	0	0	3
*COM	1304	Intro. to Communications	3	0	0	3
‡*COM	3305	Communications II	3	0	0	3
‡*COM	3306	Communications III	3	0	0	3
ECO	2304	Economics I	3	0	0	3
*ECO	2305	Economics II	3	0	0	3
TRN	4200	Cooperative Education	0	0	20	2
†Technical Electives						20
Total Credit Hours						112

*Prerequisite or corequisite required; check course description.

†TECHNICAL ELECTIVES:
Students are to select 20 credit hours from the following, after consultation with a faculty adviser.

MGT	4330	Supervision	3	0	0	3
MKT	1304	Marketing I	3	0	0	3
MKT	3320	Fundamentals of Selling	3	0	0	3
MKT	4322	Purchasing	3	0	0	3
MKT	4325	Sales Management	3	0	0	3
TRN	3320	Motor Fleet Supervision I	3	0	0	3
TRN	3321	Motor Fleet Supervision II	3	0	0	3
TRN	4300	Transportation Costing	3	0	0	3
TRN	4358	Warehousing	3	0	0	3
TRN	4360	Motor Carrier Management	3	0	0	3
TRN	4370	Transportation Seminar	1	4	0	3
TRN	4375	Import Transportation Management	3	0	0	3
TRN	4380	Export Transportation Management	3	0	0	3

‡MAT 1504, MAT 1505, MAT 1514, COM 1305, COM 1306 may be taken if the student has met requirements.

NOTE: During the admissions process, students are encouraged to obtain a course sequence from the program counselor.

Welding (V050)

The Welding curriculum gives students sound understanding of the principles, methods, techniques and skills essential for successful employment in the welding field and metals industry. Welders join metals by applying intense heat, and sometimes pressure, to form a permanent bond between intersecting metals.

Welding offers employment in practically any industry: shipbuilding, automotive, aircraft, guided missiles, heavy equipment, railroads, construction, pipefitting, production shops, job shops, and many others.

A Diploma in Welding is awarded by the College upon completion of this program.

For more information or answers to questions, call the program director, (704) 342-6709 or (704) 342-6930, weekdays, 8 a.m. to 5 p.m.

The first step to enroll: call the Admissions Center, 342-6687.

		HRS CLS /WK	HRS LAB /WK	HRS CR/ QTR
FIRST QUARTER				
WLD 5203	Blueprint Reading for Welders I	1	2	2
WLD 5401	Basic Calculations for Welders	4	0	4
WLD 5450	Gas Metal Arc Welding	2	6	4
WLD 5610	Oxyacetylene Welding and Cutting *or*	3	9	6
‡WLD 5311	Oxyacetylene Welding and Cutting I	2	3	3
‡WLD 5312	Oxyacetylene Welding and Cutting II	1	6	3
MEC 5214	Practical Metallurgy I	1	3	2
				18
SECOND QUARTER				
WLD 5204	Blueprint Reading for Welders	1	2	2
WLD 5820	Arc Welding *or*	4	12	8
	OR			
‡WLD 5421	Arc Welding I	2	6	4
‡WLD 5422	Arc Welding II	2	6	4
HSA 5200	Human Relations	2	0	2
MEC 5215	Practical Metallurgy II	1	3	2
†Elective				2
				16
THIRD QUARTER				
WLD 5240	Introductory Pipe Welding	1	3	2
WLD 5830	Gas Tungsten Arc Welding *or*	4	12	8
‡WLD 5431	Gas Tungsten Arc Welding I	2	6	4
‡WLD 5432	Gas Tungsten Arc Welding II	2	6	4
PHY 5304	Shop Science I	2	2	3
COM 5500	Communication Skills	5	0	5
				18

‡For evening students.

FOURTH QUARTER				
WLD 5267	Certification Practice	0	6	2
WLD 5268	Certification Testing	2	0	2
WLD 5654	Commercial & Industrial Practices *or*	2	12	6
‡WLD 5355	Commercial and Industrial Practices I	1	6	3
‡WLD 5356	Commercial and Industrial Practices II	1	6	3
PHY 5305	Shop Science II	2	2	3
*WLD 5404	Pipe Welding	2	6	4
				17

Total Credit Hours 69

*Prerequisite or corequisite-required; check course description.

†**RECOMMENDED ELECTIVES:**

AHR	5594	Duct Design 1—Rectangular Duct
BUS	1400	Introduction to Business
*COM	1304	Introduction to Communications
DFT	3403	Technical Drafting I
HED	1204	First Aid I
MAC	5201	Machine Shop Practices
MGT	5200	Shop Management
PME	5211	Small Engine Repair I
RDN	9510	Reading Improvement
WLD	5150	Welders Qualifications Test I

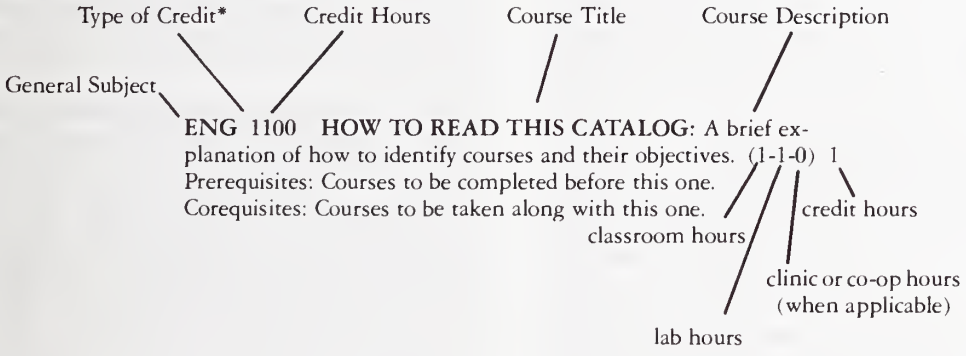
COURSE DESCRIPTIONS

Course Descriptions

This section contains brief descriptions of courses and tells what students may expect to be able to do upon completion.

The 3-letter/4-number prefix identifies a particular course. The three letters are usually an abbreviation of the teaching department—such as DFT, which precedes all drafting courses.

The 4-number part of the prefix further identifies a particular course. The first number indicates the type of credit, as explained below.* The second number indicates the number of credit hours awarded upon completion of the course. (If a line "_" appears here, credits for independent study are to be arranged between the student and the instructor.) The third and fourth numbers of the prefix have no significance for the student.


Type of Credit*
Credit Hours
Course Title
Course Description
General Subject
ENG 1100 HOW TO READ THIS CATALOG: A brief explanation of how to identify courses and their objectives. (1-1-0) 1
Prerequisites: Courses to be completed before this one.
Corequisites: Courses to be taken along with this one.
credit hours
classroom hours
clinic or co-op hours (when applicable)
lab hours

*Further explanation of Type of Credit:

1 or 2	Associate in Arts, Associate in Fine Arts degree courses (two-year programs which are transferable to four-year colleges).
3 or 4	Associate in Applied Science degree courses (two-year studies which prepare for job entry).
5	Diploma (one-year) or certificate (less than one-year) courses which prepare for job entry.
6	Adult Basic Education, Adult Basic Literacy Education, High School Completion, General Equivalence Diploma.
7 or 8	Occupational Extension/Continuing Education.
9	Developmental Studies in English, math, science, history and chemistry.

Accounting

ACC 1604 Principles of Accounting I: In this study of basic accounting principles and procedures, students will complete the accounting cycle for both service and merchandising enterprises. They will also study specialized areas such as notes, uncollectible accounts, inventories, plant assets, petty cash, bank reconciliation, and the voucher system. (5-2) 6

***ACC 1605 Principles of Accounting II:** In this continuing study of basic accounting, students will cover accounting concepts and principles, partnerships, corporations, cost accounting statements and procedures and cost analysis. The student will prepare the statement of changes in financial position using the working capital and cash concepts. *Prerequisite: ACC 1604 (5-2) 6

***ACC 2626 Intermediate Accounting I:** In addition to reviewing the acounting cycle, students will study the following topics: development of accounting standards; theory underlying financial accounting; preparation of financial statements; price level and current value accounting; accounting changes and correction of errors; accounting for cash, receivables and short-term investments; inventory costing and valuation; and pensions and leases. *Prerequisite: ACC 1605. (5-2) 6

***ACC 2627 Intermediate Accounting II:** In this continuing study of intermediate accounting, students will study various topics, including accounting for plant and intangible assets, long-term debt and investment, stockholders' equity, dilutive securities and allocation of income taxes. Preparation of the statement of changes in financial position and financial statement analysis are also covered. *Prerequisite: ACC 2626. (5-2) 6

***ACC 3304 Managerial Accounting:** Students will learn to use accounting data for planning and control. They will be acquainted with the stewardship responsibilities of management, the directing and problem-solving functions of accounting in relation to current planning and control, and the evaluation of performance, special decisions and long-range planning will be emphasized. Stress will be on analysis rather than record keeping. *Prerequisite: ACC 1604 and ACC 1605 or consent of department head. (3-0) 3

***ACC 3434 Hotel/Restaurant Accounting:** Students will demonstrate their ability to apply generally accepted accounting principles to the hospitality industry. Problems will be studied and solved in the following areas: uniform system of accounts for hotels; basic accounting controls; food, beverage and labor accounting principles and controls; specialized journals and ledgers; financial statements; voucher systems; budget planning; and credit systems. *Prerequisite: ACC 1604. (3-2) 4

ACC 3500 Small Business Accounting: Upon satisfactory completion of this course, students should be able to describe the different types of business enterprise; describe the basic accounting cycle; demonstrate an understanding of financial analysis by calculating cash flow, working capital, current ratio, return on investment, earnings per share, inventory turnovers, etc.; establish, control and reconcile a bank account; calculate payrolls; complete required governmental reports such as quarterly returns; describe inventory control and methods of inventory; calculate asset depreciation and identify license requirements. (5-0) 5

ACC 3600 General Accounting: After completion of this course, students should be able to analyze, journalize, and post business transactions for service and merchandising organizations and complete the end-of-period financial statements. In addition to this basic study of the accounting cycle, they will study other areas such as payrolls, bank reconciliations, petty cash funds, and special journals. (5-2) 6

***ACC 4364 Budget and Record Keeping:** When this course is completed, students should be able to use historical accounting records to project future revenues and expenses, prepare budgets and use them for control purposes; apply budget procedures for departmental evaluation; prepare management reports and recommendations based on the budget; and analyze variances between budgeted and actual figures to determine responsibility for control. *Prerequisite: ACC 1604. (3-0) 3

***ACC 4404 Auditing:** Students will study the theories and practices of auditing and also the generally accepted auditing standards and rules of professional conduct and legal liability. Students will solve numerous problems illustrating specific techniques of auditing various general ledger accounts. These problems will develop internal auditing concepts and procedures as well as the public accounting viewpoint. Current trends in financial statement preparation will be reviewed. *Prequisite: ACC 2627. (3-2) 4

***ACC 4414 Microcomputer Accounting:** Upon completion of this course, students will be able to: use the microcomputer to record transactions in the general ledger system; maintain an up-to-date file of customer accounts receivable; maintain an up-to-date file on creditor accounts payable; maintain a simple payroll system and prepare depreciation schedules. In addition, they will be able to prepare financial statements and provide information reports for management use. *Prerequisite: ACC 1605. (2-4) 4

***ACC 4425 Taxes—Business and Fiduciary:** In this study of federal and state income tax laws and regulations, students will demonstrate satisfactory competency in preparing business returns and fiduciary returns. Topics include income tax withholding, reporting business or professional income for individuals, partnerships, corporations and fiduciaries; researching and solving tax problems; applying federal and state laws for gifts and estates. *Prerequisite: ACC 1605. (3-2) 4

ACC 4434 Taxes—Individual: Students will study current federal and state income tax laws and demonstrate their ability in finding, interpreting and applying the relevant laws in the preparation of individual income tax returns of moderate complexity. These returns will involve supporting schedules and forms necessary for reporting income, deductions and tax computations. Students will also demonstrate competency in solving problems in tax planning, minimizing taxes for the average taxpayer, and preparing declarations of estimated tax, extensions of time to file and amended tax returns. (3-2) 4

***ACC 4444 Cost Accounting:** In this study of manufacturing cost systems, students will study a variety of problems illustrating the principles and procedures of job order and process costing operations. The use of standard costs and other data for management control is included. Students will calculate and apply estimated overhead rates using a variety of bases. *Prerequisite: ACC 1605. (3-2) 4

***ACC 4447 Advanced Accounting:** Students will solve a wide variety of problems illustrating advanced application of accounting principles and procedures. Topics include partnership accounting, branch acounting, accounting for mergers and consolidations, parent-subsidiary consolidations, estates and

trusts, and government accounting. Emphasis is placed on problem-solving techniques applying related APB and FASB pronouncements. *Prerequisite: ACC 2627. (3-2) 4

Adult Basic Literacy Education

ABL 6003 Basic Reading Level I: Upon completion of this course, students should be able to: identify names of the letters and sounds of the consonants; identify short vowel sounds; identify long vowel sounds; identify other vowel and consonant spellings; fill in application forms; use a dictionary; understand concepts of a paragraph; read a story and answer questions about the main idea and details; summarize, recall sequence of events, draw inferences and apply topics to everyday life.

ABL 6013 Basic Reading Level II: Upon completion of this course, students should be able to: form and read new words by adding inflectional endings, prefixes and suffixes; select appropriate meanings of words; form sentences from phrases; identify the main idea, topic sentences and details that support the main idea.

ABL 6004 Basic Math Level I: Upon completion of this course, students should be able to: add and subtract one-digit to multi-digit numbers; multiiply one- to three-digit numbers; subtract from zero and multiply with zeros.

ABL 6014 Basic Math Level II: Upon completion of this course, students should be able to: add, subtract, multiply and divide fractions, mixed numbers and decimals; find the percent of the number and determine what percent one number is of another; identify ratios and how to solve a proportion; compute with measures; add, subtract, multiply and divide positive and negative integers.

Adult Basic Education

ABE 6001 Adult Basic Education Level I: Upon completion of this course, students should be able to: identify names of the letters and sounds of the consonants; identify short vowel sounds; identify long vowel sounds; identify other vowel and consonant spellings; fill in application forms; use a dictionary; understand concepts of a paragraph; read a story and answer questions about the main idea and details; summarize, recall sequence of events, draw inferences and apply topics to everyday life; add and subtract one-digit to multi-digit numbers; multiply one- to three-digit numbers; subtract from zero and multiply with zeros.

ABE 6002 Adult Basic Education Level II: Upon completion of this course, students should be able to: form and read new words by adding inflectional endings, prefixes and suffixes; select appropriate meanings of words; form sentences from phrases; identify the main idea, topic sentences and details that support the main idea; add, subtract, multiply and divide fractions, mixed numbers and decimals; find the percent of the number and determine what percent one number is of another; identify ratios and how to solve a proportion; compute with measures; add, subtract, multiply and divide positive and negative integers.

Advertising Design

***ADV 1300 Photography for Advertising:** Upon successful completion of this course, students will be able to: use the view camera to control depth of field and distortion; produce technically professional photographs under studio lighting conditions; produce high contrast negatives and positives using the process camera; produce halftone negatives using the process camera. In addition, students will develop advanced laboratory skills, allowing them to produce a group of photographs to be used in their Advertising Design portfolio. *Prerequisite: ART 1385. (1-4) 3

***ADV 3401 Illustration I:** Upon completion of this course, students should be able to: identify the types of illustrations in use today; execute preliminary comps for illustrations; make spot illustrations; execute illustrations with the use of mechanical drawing aids; and prepare full-color illustrations using a variety of media. *Prerequisite: ART 1406 and ART 1426. (2-4) 4

***ADV 3404 Illustration II:** Upon completion of this course, students will have structured experience in creating original illustrations for magazines, books, newspapers and other visual communications; will have worked creatively with a variety of art media such as acrylic paints, transparent watercolor and airbrush. They will have developed skills in drawing and painting the human form and will have guidance and experience equipping them to conduct a freelance illustration studio. *Prerequisite: ADV 3401. (2-4) 4

***ADV 3414 Computer Assisted Design:** Upon completion of this course, students should be able to use microcomputers with associated hardware and software to create full-color graphics for a variety of visual communications. *Prerequisite: ART 1406, ART 1426 or divisional consent. (2-4) 4

ADV 4300 Advertising Principles: Upon completion of this course, students should be able to: describe the relationship of social and economic conditions to today's advertising; identify the advantages and limitations of major communications media; describe the operation and organization of an advertising agency; discuss the advertising spiral; and plan a small multimedia advertising campaign. (3-0) 3

***ADV 4310 Fashion Illustration I:** Upon completion of this course, students will be able to: illustrate the human figure in simple compositions that best enhance the garment; visually demonstrate the illusion of different types of fabric textures and garment detailing in these illustrations, using wet and dry media. *Prerequisite: ART 1406. (2-2) 3

***ADV 4311 Fashion Illustration II:** Upon completion of this course, students will be able to: illustrate complex compositions of human figures, showing clear textural and design detail for both clothing and fashion accessories, suitable for newspaper and magazine advertising, in a variety of media; produce thje layouts for these ads and demonstrate an understanding of print reproduction. *Prerequisite: ADV 4310. (2-2) 3

ADV 4313 Cartooning and Caricaturing: In this course, students will analyze techniques in cartooning and caricature, drawing and interpreting given problems with emphasis on originality. (2-2) 3

***ADV 4390 Independent Study:** A course designed to permit the individual student or group to work beyond the limits of the regular course offerings in the commercial art area on self-determined objectives utilizing the resources of the Art Division. *Prerequisite: Completed sequence of art courses in the area of proposed independent study. Students interested in pursuing areas in commercial art that are not part of regular course offerings should contact an instructor for suggestions and possibilities. (3-0) 3

*ADV 4414 **Advertising Production I:** Upon completion of this course, students will be able to: properly use basic tools for advertising and graphic design layouts and mechanical artwork; demonstrate an understanding of printing methods and color separation processes, including PMS color and process color; and use the appropriate terminology for the advertising business. *Prerequisite: ART 1406, ART 1426, ADV 4454. (2-4) 4

*ADV 4415 **Advertising Production II:** Upon completion of this course, students will be able to: produce complex ads, designs and mechanical artwork; demonstrate precise linework, such as needed for a trademark; coordinate concept, type, color and paper through to the camera-ready stage and be able to use and/or identify embossing, die-cutting, foil-stamping, color keys and special effects screens. *Prerequiste: ADV 4414 (2-4) 4

*ADV 4416 **Advertising Production III:** Upon completion of this course, students will be able to: produce concepts that are based on good analysis, research and design with refined technical skills; produce a package of advertising and promotional materials, such as a series of self-promotional items related in both theme and image, through camera-ready art to the printed piece. *Prerequisite: ADV 4415 (2-4) 4

*ADV 4417 **Advertising Production IV:** Upon completion of this course, students will be able to demonstrate proficiency in layout and mechanical art skills and a clear understanding of production techniques, processes and general job costs. Through assigned projects, they will demonstrate skills in visually and verbally communicating effectively with a "client," the printer and in securing necessary supplied. *Prerequisite: ADV 4416, ADV 4455. (2-4) 4

*ADV 4424 **Advertising Studio I:** Upon completion of this course, students should be able to: produce professional quality layouts in semi-comprehensive form for various visual communications such as newspaper and magazines; design and lay out multi-colored flexible packages and/or folding carton packages; prepare camera-ready art, including type and color separation amberlith overlays for the above assignments; and properly use studio equipment such as photostat, phototypositor and PMT processor. *Prerequisite: ART 1406, ART 1426. (2-4) 4

*ADV 4425 **Advertising Studio II:** Upon completion of this course, students should be able to: identify the different types of halftone art; design and lay out various print advertisements with halftone art; prepare semi-comps and camera-ready art for various types of consumer and business-related advertisements, such as trade and industrial ads; plan and produce a dummy and camera-ready art for multi-page publications, such as booklets and brochures; design and prepare for reproduction, direct-mail advertisements and/or announcements for consumer or business use. *Prerequisite: ADV 4424. (2-4) 4

*ADV 4426 **Advertising Studio III:** Upon completion of this course, students should be able to: design and prepare a finished layout and camera-ready art for a class annual, according to classroom guidelines; design and prepare finished layouts and/or comprehensives for both consumer and business direct-mail advertising; design and prepare three-dimensional dummies for sales promotion campaigns; design and prepare comprehensive layouts for outdoor advertising by local and national accounts. *Prerequisite: ADV 4425. (2-4) 4

*ADV 4427 **Advertising Studio IV:** Upon completion of this course, students will have completed advanced projects in advertising design, such as television productions and multimedia campaigns; and will have applied typographic, design and media solutions to marketing problems in advertising. *Prerequisite: ADV 4426. (2-4) 4

*ADV 4436 **Advertising Thesis:** Upon completion of this course, students should be able to: identify their immediate and long-range vocational objectives; prepare a professional portfolio which will help to achieve these immediate objectives; and present the portfolio to prospective employers in a confident and professional manner. *Prerequisite: ADV 4416, ADV 4426. (2-4) 4

*ADV 4454 **Typography and Lettering I:** Upon completion of this course, students will be able to: render letterforms from a free-style calligraphic form to more finished and specific typestyles, using a variety of media; use the vocabulary and basic methods of typesetting. Spacing guidelines between characters and words will be explored, as well as basic designing with letters. *Prerequisite: ART 1404, ART 1424. (2-4) 4

*ADV 4455 **Typography and Lettering II:** Upon completion of this course, students should be able to use type as a design and communications element. Formats involving consideration of headline and text type along with type specifying will be a main focus. Through practical problems students will continue to identify and execute specific typestyles and examine the art, impact and legibility of the printed word in advertising. *Prerequisite: ADV 4454. (2-4) 4

Air Conditioning, Heating and Refrigeration

*AHR 4304 **Introduction to Psychrometrics:** Upon completion of this course, students should be able to: describe the basic properties of air; describe the changes in volume and pressure with temperature; describe dew point temperature; describe humidity ratio, sensible heat, latent heat and their relationship with each other; determine sensible heat ratios, mixed air temperatures and enthalpy values; solve simple problems using the psychrometric chart. *Prerequisite: Completion of first year AHR courses. (3-0) 3

*AHR 4325 **Air Conditioning, Heating and Refrigeration Drawing and Sketching:** Upon completion of this course, students should be able to: identify the typical symbols used on the drawings of air conditioning and refrigeration system plans; free-hand sketch simple plans showing equipment; produce orthographic projection drawings of simple equipment and fittings; draw a simple plan of a heating and air conditioning system; organize the required information needed for a complete plan of a heating and air conditioning design. *Prerequisite: Completion of the first year of AHR courses. (1-4) 3

*AHR 4361 **Residential Air Distribution and Balance:** Upon completion of this course, students should be able to demonstrate a comprehensive knowledge and understanding of air and its behavior in a duct or residential air distribution system; design each of the four basic duct systems used in residences; design a return system for residences; estimate blower capacity; estimate and measure friction loss; size an air distribution system for a residence correctly. *Prerequisite: Completion of first year AHR courses. (2-2) 3

*AHR 4372 **Hydronic Distribution Systems Design:** Upon completion of this course, students should be able to: select boiler and other components for a complete system,

utilizing charts, tables, and catalog information; design commonly used hydronic systems and size pipe by accepted methods; determine water temperatures and quantities to meet calculated load conditions. *Prerequisite: Completion of first year AHR courses. (3-0) 3

*AHR 4373 Hydronic Systems Balance: Upon completion of this course, students should be able to: use proper instruments to test, adjust and balance a system; analyze parallel and series application of pumps; analyze zone control methods and related equipment; use pump and system curves to analyze system performance; choose the best design for a specific application; measure water temperature at various terminal units to determine BTU output; construct a system curve based on measured water flow; use pump curves to estimate flow rate and head. *Prerequisite: Completion of first year AHR courses; Corequisite: AHR 4372. (2-2) 3

*AHR 4451 Commercial Refrigeration System Design: Upon completion of this course, students should be able to: estimate the cooling load requirements for any common commercial refrigeration application; select proper equipment and controls to meet loan requirements; design and size a refrigeration piping system including piping accessories and controls. *Prerequisite: Completion of first year AHR courses. (4-0) 4

*AHR 4452 Residential Air Conditioning Systems Design: Upon completion of this course, students should be able to: estimate the heating and/or cooling needs of a residence; select the proper size of heating and/or cooling equipment required to meet the estimated needs; determine air quantities on a room by room basis; select room air outlets and returns; size duct work for simple systems. *Prerequisite: Completion of first year AHR courses. (3-2) 4

*AHR 4453 Commercial Air Conditioning Systems Design: Upon completion of this course, students should be able to: estimate the heating and/or cooling requirements of a commercial-type structure; choose the proper size of heating and/or cooling equipment to meet these requirements; determine air mixture conditions entering and leaving a cooling coil; use psychrometric chart to determine conditions of mixed air flow; determine sensible and latent heat loads of air quantities; determine quantities and mixture conditions based upon calculated loads. *Prerequisite: Completion of first year AHR courses. (3-2) 4

*AHR 4462 Commercial Air Distribution and Balance: Upon completion of this course, students should be able to: describe air and its behavior in a commercial air distribution system, describe the types and classes of fans and their applications, use fan charts to select fans and analyze air systems, discuss basic air distribution systems including duct sizing methods and proper selection of air outlets and returns. *Prerequisite: Completion of first year AHR courses. (3-2) 4

*AHR 4463 Control Systems: Upon completion of this course, students should be able to interpret symbols on a control schematic diagram, draw a control schematic diagram, compare various control systems and select the one best suited for a specific application, prepare a control diagram for a refrigeration system, properly assemble the components for an operating control system, test and analyze control circuits, adjust various controls in a system. *Prerequisite: Completion of first year AHR courses. (3-2) 4

*AHR 4471 Installation and Service Problems: Upon completion of this course, students should be able to: use a variety of test instruments; estimate capacity requirements of various components and equipment; select proper location for various components; examine various systems and solve service problems using a variety of shop and field equipment; test and repair lab units; evaluate installation requirements; compare piping techniques; select system accessories. *Prerequisite: Seventh quarter standing in Air Conditioning, Heating and Refrigeration Technology program. (2-6) 4

AHR 5200 Solar Domestic Hot Water Installation: Upon completion of this course, students should be able to: define the terms used in the solar energy industry; determine available solar insolation; determine hot water needs for an average family; select and properly size solar components; determine proper location and mounting for solar collectors; install all system components and hardware correctly; fill and start up a system correctly; perform trouble-shooting and preventive maintenance techniques. (1-3) 2

*AHR 5204 Wiring Diagrams and Troubleshooting for A/C Systems: Upon completion of this course, students should be able to: identify the more commonly used control components, their symbols, and describe their function in the control system; read wiring diagrams; trouble-shoot and replace controls in a control system. *Prerequisite: AHR 5314. (1-3) 2

*AHR 5224 A/C, Heating and Refrigeration Blueprint Reading: Upon completion of this course, students should be able to: interpret a simple residential blueprint; use plans, schedules and tables; describe use of notes, lines, projections and dimensioning procedures. *Prerequisite: AHR 5301. (1-2) 2

AHR 5301 Basic Electricity: Upon completion of this course, students should be able to: discuss electrical terms; identify electrical symbols; apply Ohm's Law and Kirchoff's Law; draw wiring diagrams of series and parallel circuits; discuss the Wheatstone Bridge; describe magnetism as it applies to electricity; discuss the fundamentals of electrical current generation; describe the function of simple electrical controls as they are used in air conditioning and refrigeration systems. (3-0) 3

AHR 5312 Shop Practices: Upon completion of this course, students should be able to: select the correct tubing for refrigerant use; bend tubing properly; flare and swage tubing; use various solders and techniques in making a series of soldered connections; construct a small piping system; use a gauge manifold; examine a tubing or piping system for leaks utilizing at least three leak detection methods. (2-3) 3

*AHR 5313 Refrigeration Service Principles: Upon completion of this course, students should be able to: use the gauge manifold properly; analyze several operating refrigeration systems and measure the degree of efficiency of each; inspect, remove and re-install various sub-assemblies of the system; examine all components; distinguish and replace faulty system components; test entire system and place into operation. *Corequisites: AHR 5411, AHR 5412, AHR 5301. (2-3) 3

*AHR 5314 Automatic Controls: Upon completion of this course, students should be able to: understand and use electrical measuring instruments; identify and describe the function and operation of basic control devices; install and wire these basic controls into a control circuit; select the proper type and size of wire for each application; read basic pictorial wiring diagrams. *Prerequisite: AHR 5301. (2-3) 3

*AHR 5321 Commercial Refrigeration Installation: Upon completion of this course, students should be able to: describe various types and applications of commercial refrigeration installations; compare various defrost methods; select correct

safety and operating controls for a given application; construct a refrigerant piping system; charge the system with proper amount of refrigerant and test for leaks; start up system. *Prerequisites: AHR 5313, AHR 5301, AHR 5411 and AHR 5412. (2-3) 3

*AHR 5322 Commercial Refrigeration Service: Upon completion of this course, students should be able to: compare various commercial refrigeration systems; use necessary tools and apply service techniques taught in this course; test for and repair refrigerant leaks; analyze a system malfunction; choose and install correct replacement component(s); test for proper operation of entire system; use specific equipment to dehydrate and evacuate system; install correct refrigerant charge; start system; evaluate system operation. *Prerequisite: AHR 5301, AHR 5313 and AHR 5412. (2-3) 3

*AHR 5323 Oil Burners: Upon completion of this course, students should be able to: differentiate between the various types of oil burners; test and evaluate high pressure type burners; assemble a high pressure oil burner; interpret an electrical diagram for an oil burner assembly; prepare the oil burner for testing; measure combustion efficiency. *Prerequisite: AHR 5301, AHR 5412. (2-3) 3

*AHR 5333 Liquid Heat — One and Two Pipe Systems: Upon completion of this course, students should be able to: identify various types of heating units commonly used with one-pipe and two-pipe hydronic systems; sketch the basic systems commonly used in these systems; determine water quantities and temperature drops; select the essential accessories for hydronic systems; size pipes and select pumps; identify the kinds of boilers used; describe the basic requirements of the N.C. State Code as related to residential hydronic systems; size steam piping for one-pipe steam systems. *Prerequisites: AHR 5401, AHR 5411, AHR 5412. (2-3) 3

*AHR 5341 Gas Heat: Upon completion of this course, students should be able to: differentiate between the various types of gas furnaces; describe operating and safety controls; design the gas piping system properly; test vent and test gas piping for leaks and proper operation; dismantle entire furnace, evaluate its condition, repair or replace faulty components, and reassemble the unit; start up the completed installation; describe the safety codes; measure combustion efficiency. *Prerequisite: AHR 5204, AHR 5314, AHR 5411, AHR 5412. (2-3) 3

*AHR 5342 Electric Heat: Upon completion of this course, students should be able to: calculate the heat loss in wattage on a room to room basis for a structure; select the most appropriate type of system for a particular application; choose the correct controls for the system selected; design a simple system; assemble all components and install them; inspect and test systems and components for safe and proper operation; solve problems with system components; estimate approximate annual cost of operation; measure efficiency, voltage and wattage or current draw of a system. *Prerequisite: AHR 5314, AHR 5411. (2-3) 3

*AHR 5394 Mechanical Codes: Upon completion of this course, students should be able to: demonstrate a comprehensive understanding of the North Carolina Building code relating to air conditioning in residences and commercial buildings; compare the systematic methods of designing and sizing an air conditioning system; evaluate the systematic methods of designing, sizing and installing the refrigerant piping and condensate drain(s); employ applicable standards to the installation of all air conditioning systems and equipment. *Prerequisites: AHR 5323, AHR 5333, AHR 5341 and AHR 5342. (3-0) 3

AHR 5401 Basic Calculations for A/C, Heating and Refrigeration Mechanics: Upon completion of this course, students should be able to: apply the principles of addition, subtraction, multiplication and division to problems relating to the heating and air-conditioning field; calculate direct and indirect ratio and proportion; read a ruler accurately; manipulate fractional and decimal numbers; use simple equations to solve arithmetic formulas in the field; use a ductalator and Ohm's Law table; perform calculations for area and volume; understand scale measurement and angular measure; discuss measurement using the metric system as well as the English system. (4-0) 4

*AHR 5431 Air Conditioning—Residential/Commercial: Upon completion of this course, students should be able to: discuss the terminology used in the field; diagram a complete refrigeration cycle, properly identifying all components; choose all necessary major components; differentiate between water and air-cooled equipment; design a simple residential air conditioning system; employ all safety measures; compare remote and self-contained systems; compare air moving equipment; describe various commercial air conditioning systems; inspect, test and analyze a commercial system; solve service problems on systems. *Prerequisites: AHR 5422, AHR 5314, AHR 5313, or one year field experience in lieu of AHR 5413. (3-3) 4

*AHR 5443 All Weather Systems — Conventional: Upon completion of this course, students should be able to: describe the application of both heating and cooling in one system; compare the various combinations of oil-electric, gas-electric, all-electric and other available combination systems; select the proper safety and operating controls for either type system; assemble all equipment and components and construct an all-weather system of the conventional type; inspect and test systems; solve service problems; revise improperly installed systems; measure and evaluate the overall performance of an all weather conventional type system. *Prerequisites: AHR 5323, AHR 5341, AHR 5342. (3-3) 4

*AHR 5444 All Weather Systems — Heat Pumps: Upon completion of this course, students should be able to: draw a diagram of the refrigerant cycle; describe the heat pump concept; discuss the air to air and water to air heat pump; select all components necessary to construct a heat pump; make a diagram showing all necessary operating and safety controls; perform service procedures on lab equipment; discuss good design and installation practices. *Prerequisites: AHR 5204, AHR 5313, AHR 5342, AHR 5412. (2-6) 4

NOTE: The program director may waive prerequisites/corequisites for those students with appropriate field experience.

Anthropology

ANT 1502 General Anthropology: Upon completion of this course, students should be able to: demonstrate a knowledge of personality structure, stratification systems, marriage-family-kinship systems, religion-magic-witchcraft, economic systems, political organization, law and social control, socio-cultural change, and linguistics in preliterate societies. In addition, students should demonstrate a knowledge of human paleontology, archaeology, primatology, human variation and cultural history. (5-0) 5

Architectural Technology

ARC 3200 Introduction to Architecture: Upon completion of this course, students should be able to: identify the role of the architect and the technician in our society and architectural

profession; discuss the development of buildings; list the ways in which architectural design has responded to changes in society which are reflected in the major building types; and evaluate the basic building types and their problems. (2-0) 2

ARC 3210 Design Your House Plans: Upon completion of this course, students should be able to: design their own home plans or alter existing plans; draw plans and elevations with proper dimensioning; select effective house orientation for sun, wind, view and privacy, as well as the topography of the site; choose the most appropriate basic house structure and determine involved traffic patterns; plan the individual rooms, stairs, halls and core units (kitchen, bath and utility rooms); and design the exterior of the house, including shape and proper material. (1-2) 2

ARC 3212 Home Construction Cost Estimating: Upon completion of this course, students should be able to: produce quantity take-offs of home building materials; apply unit prices to material take-offs; adjust prices for regional differences; describe a basic understanding of the home building bidding process; solicit and receive bid prices for a residence; and state the purpose of the various documents related to a contract. (1-2) 2

ARC 3301 Build Your Home: Upon completion of this course, students should be able to: evaluate information and procedures required in all facets of building or remodeling a home, including areas of building codes, zoning laws, and site selections; perform basic interior and exterior design programs, including selection and use of building materials; recognize the various alternatives in heating and air conditioning, plumbing and electrical systems; review plans, specifications and other contract documents required in the relationship with contractors and financial institutions. (3-0) 3

ARC 3302 Home Construction Methods and Details: Upon completion of this course, students should be able to: identify and evaluate information and procedures pertaining to house construction such as lot surveys, drainage, excavation and foundation construction, foundation walls, floors, wall and roof framing; appraise prefabricated walls and roof trusses, various types of duct work, heating and plumbing rough-in work, electrical wiring; compare and select exterior wall coverings, roofing materials, interior wall finishes, kitchen and bathroom equipment, floor coverings, plumbing-lighting-electrical fixtures and devices, and hardware; evaluate the actual application of the construction materials and techniques through site visitation. (3-0) 3

***ARC 3303 Interior Design Drafting I:** Upon completion of this course, students should be able to: apply basic light construction terminology to drawings; draw residential and industrial plans and details; recognize standard building materials and their sizes; compare and select various types of windows and doors; use inking pens; discuss contents of residential and industrial building codes; and use reference material and graphic standards. *Prerequisite: ARC 3334. (1-6) 3

***ARC 3304 Interior Design Drafting II:** Upon completion of this course, students should be able to: lay out standard building modular sizes; utilize information determined from residential and commercial building blueprints; interpret and write basic specifications; draw an electrical plan with a fixture schedule; identify various types of heating and cooling systems and draw a plan using the mechanical equipment symbols; draw working plans and details for cabinet makers and mechanics. *Prerequisite: ARC 3303. (1-6) 3

***ARC 3312 Residential Working Drawings:** Upon completion of this course, students should be able to: apply basic residential construction terminology to drawings; draw residential working drawings including plans, elevations, details, schedules, lighting, and site plans; and be familiar with basic code requirements. *Prerequisite: ARC 3334 or equivalent. (1-6) 3

***ARC 3314 Architectural Computer Drafting (CAD) AutoCAD (I):** Upon completion of this course, students should be able to: identify the components of the AutoCAD System and define their use; demonstrate a working understanding of the basic commands of the system; draw architectural drawings; dimension; have a working understanding of layers and linetypes; and plot a drawing. *Prerequisite: ARC 3335 or equivalent. (1-6) 3

***ARC 3318 Computer-Aided-Drafting (CAD)—Fastdraft:** Upon completion of this course, students should be able to: identify the components of a CAD system and define their use; state the major CAD systems used in industry, their similarities and differences; describe a working understanding of the commands and controls of a CAD system; draw typical architectural details and plans; draw objects in orthographic projection; and dimension architectural floor plans. *Prerequisite: ARC 3335 or equivalent. (1-6) 3

***ARC 3324 Architectural Computer Drafting (CAD)—Large Systems (I):** Upon completion of this course, students should be able to: identify the components of the CADDS 4X CAD Syetem and define their use; demonstrate a working understanding of the basic commands and controls of the CADDS 4X System; produce basic architectural drawings; perform basic computer graphics editing; dimension architectural floor plans; draw basic elevations; and produce a printed drawing from the computer graphics. *Prerequisite: ARC 3314 or ARC 3318 or equivalent. (1-6) 3

***ARC 3325 Architectural Computer Drafting (CAD)—Large Systems (II):** Upon completion of this course, students should be able to: construct 3-D models; construct drawings with multiple views; construct library parts; write execute files to aid in production of drawings; and produce working architectural drawings. *Prerequisite: ARC 3324. (1-6) 3

ARC 3334 Architectural Drafting I—Basic and Residential: Upon completion of this course, students should be able to: use drafting equipment; develop skills in lettering and drawing; use architectural and engineering scales; do freehand sketching; and draw basic residential plans, elevations and details. (1-6) 3

***ARC 3335 Architectural Drafting II—Site Planning and Commercial:** Upon completion of this course, students should be able to: be familiar with siting buildings from the standpoint of orientation, utilities, cut and fill, parking and drives; understand the effect of zoning and other code requirements; have an introductory understanding of commercial working drawings, including sheet sequence and basic commercial construction terminology; and prepare preliminary commercial drawings—floor plans, elevations and sections. *Prerequisite: ARC 3334. (1-6) 3

***ARC 3336 Architectural Drafting III—Commercial A:** Upon completion of this course, students should be able to: become familiar with fundamental exterior commercial construction, building materials, and site work; develop and draw plans, wall sections and details; and detail exterior systems and construction. *Prerequisite: ARC 3335. (1-6) 3

ARC 4200 Architectural Blueprint Reading and Specifications: Upon completion of this course, students should be able to: visualize building floor plans, elevations, sections and

details in relation to the completed three-dimensional structure; recognize drawing conventions, standard materials and equipment symbols on architectural, structural, mechanical and electrical plans; apply information obtained from residential working drawing floor plans, elevations, sections and details as well as heating, air conditioning, plumbing and electrical plans; utilize information determined from commercial building blueprints pertaining to masonry, reinforced concrete, structural steel and heavy timber construction; discuss contents of specifications and how they relate to drawing in the design and construction of buildings. (1-3) 2

*ARC 4284 **Cooperative Work Experience I:** Upon completion of this course, students should be able to: demonstrate a positive attitude toward and knowledgeable understanding of careers in the Architectural Technology Industry; demonstrate results of applied experience to complement class and lab instruction. *Prerequisite: 45 credit hours earned in residence toward engineering technology degree, and permission of program director. (0-0-20) 2

*ARC 4300 **Architectural-Mechanical Equipment:** Upon completion of this course, students should be able to: identify the types of plumbing distribution and hot water supply systems; size piping layout for a fresh water and a sanitary plumbing system; identify types of electrical wiring and service equipment; associate the types of heating and cooling systems for buildings; identify the fundamentals of lighting and associated equipment; and describe vertical transportation equipment such as elevators. *Prerequisite: ARC 3335 and ARC 4200. (2-3) 3

*ARC 4302 **Architectural Model Construction:** Upon completion of this course, students should be able to: use basic tools and equipment necessary to build models; build various types of contours and landscape models; construct simple study models for architectural engineering or interior design study; represent the basic building materials at various scales; construct either architectural, structural or interior models from blueprints. *Prerequisite: ARC 3334 or ability to read blueprints. (1-6) 3

ARC 4310 **Energy Efficient and Solar Home Design:** Upon completion of this course, students should be able to: identify the different systems of passive solar installation; understand the sun's effect on the earth; compute heat loss and gain; utilize the basic tools of passive design; become acquainted with actual passive applications; and gain a basic understanding of the performance of various building materials and insulation. (3-0) 3

*ARC 4337 **Architectural Drafting IV—Commercial B:** Upon completion of this course, students should be able to: develop stair and elevator drawings from floor plans; study interior finishes and materials; incorporate manufacturers' building equipment into drawings; and coordinate drawings and schedules. *Prerequisite: ARC 3336. (1-6) 3

*ARC 4338 **Architectural Drafting V—Mechanical Electrical and Plumbing:** Upon completion of this course, students should be able to: draw mechanical duct layouts; draw lighting, electrical plans and schedules; draw plumbing plans, schedules and riser diagrams; and identify and utilize appropriate symbols. *Prerequisite: ARC 3336 and ARC 4300 or instructor's permission. (1-6) 3

*ARC 4339 **Architectural Drafting VI—Structural:** Upon completion of this course, students should be able to: design and draw structural steel framing for a simple commercial or industrial building; design and shop detail the component parts of steel structures, including bolted and welded connections; analyze continuous beams; design composite construction floor systems with the use of the AISC Manual; and detail the component parts of reinforced concrete structures. *Prerequisite: CIV 4427, ARC 3335; Corequisite: CIV 4434. (1-6) 3

*ARC 4345 **Architectural Presentation Drawing:** Upon completion of this course, students should be able to: perform basic and advanced architectural presentation techniques, including the use of shading, shadows, and the use of perspective charts; apply a variety of media including pencil, ink and color; draw vegetation, people and transportation vehicles; produce a complete architectural rendering. *Prerequisite: ARC 3335 or equivalent. (1-6) 3

*ARC 4440 **Architectural Drafting VII—Working Drawings:** Upon completion of this course, students should be able to: perform as team members in the preparation of schematic design drawings to meet the building requirements of a hypothetical client; function as members of the production team in the preparation and presentation of design development drawings; apply the fundamentals of ordinances and regulations pertaining to zoning, traffic and facilities for the physically handicapped; produce, as members of the team, a set of architectural working drawings consisting of site plan, floor plans, reflected ceiling plans, elevations, wall section and details; and apply office practice methods pertaining to project production. *Prerequisites: ARC 4300, ARC 4337, ARC 4300. (1-9) 4

ARC 4_94 **Independent Study:** This course is designed to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment will provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor and program director is required prior to enrollment. (1-5 credits)

(Also see Civil Engineering Technology for other course descriptions.)

Art

ART 1200 **Fiber Dyes:** In this course, students will explore the use of natural and synthetic dye processes for the handweaver. Direct dyeing and top-dyeing with a variety of dye types will be explored along with color theory.† (0-4) 2

ART 1202 **Calligraphy I:** Upon completion of this course, students will be able to execute three lettering styles using basic calligraphy tools and materials. They will also be familiar with basic lettering rules, design and layout principles, and preparation of calligraphy for reproduction.† (1-2) 2

†ART 1203 **Art & Technology:** Upon completion of this course, students should be able to create new art forms based on the use of various office machinery and technological innovations. Students will create five projects which are based on the application of mimeograph, computer, thermofax, xerox and blueprint copier to art forms. (1-2) 2

†*ART 1210 **Calligraphy II:** Upon completion of this course, students will be familirar with various pens, papers and inks used for calligraphy. The history of calligraphy will be studied and students will be able to execute five basic styles of writing, work with color, and create finished pieces combining lettering and a border or other design. *Prerequisite: ART 1202. (1-2) 3

†*Does not satisfy humanities requirement.*

ART 1300 Introduction to Art I: Upon completion of this course, students should be able to demonstrate a recognition and understanding of the basic elements and principles of design as they apply to the visual arts. Through written or oral means they will demonstrate an understanding of appropriate terms and the skills required in the various art media, and a knowledge of how the visual arts affect daily life and commerce. (3-0) 3

ART 1301 Introduction to Art II: Upon completion of this course, students should demonstrate an ability to draw parallels between art of the past and present. They should demonstrate an understanding through written or oral means of broad social, political, psychological and economic motivations for creating art. (3-0) 3

†**ART 1303 Printmaking II:** Upon completion of this course, students should be able to select woods, execute appropriate designs for woodcuts, handle woodcut tools properly, and produce editions of prints using various woodcut techniques. (0-6) 3

ART 1310 History of Art I: Students will survey major visual arts and the influence of the historical past on the concepts and form of contemporary creative endeavor: Prehistoric through Gothic. (3-0) 3

ART 1311 History of Art II: Students will survey major arts and the influence of the historical past on the concepts and form of contemporary creative endeavor: the Renaissance, Baroque and Rococo up to the 18th century. (3-0) 3

ART 1312 History of Art III: Students will survey the major arts and the influence of the historical past on the concepts and form of contemporary creative endeavor from the 18th century Rococo and rise of Romanticism through the art of the 20th century. (3-0) 3

†**ART 1314 Basic Woodworking:** Upon completion, students should know the characteristics of a variety of woods and will be able to use powered and hand tools properly in the processes of shaping, joining and finishing wood. (0-6) 3

†***ART 1315 Intermediate Woodworking:** Using and improving the knowledge and skills acquired in basic woodworking, students will produce finished woodworking projects. *Prerequisite: ART 1314 or divisional consent. (0-6) 3

†***ART 1316 Advanced Woodworking:** Continuing to expand knowledge and skills from basic and intermediate woodworking, students will design and produce original projects in wood. *Prerequisite: ART 1315 or divisional consent. (0-6) 3

†**ART 1317 Furniture Restoration I:** After completing this course, students should be able to identify the presence of shellac, lacquer, oil and varnish finishes on furniture and will know the process for removing old wood finishes, applying oil stains, bleaching wood, proper sanding methods, and applying new finishes. (0-6) 3

†***ART 1318 Furniture Restoration II:** Students will continue to improve skills in applying new finishes, sanding techniques, and waxing furniture. In addition, they will learn how to operate woodworking tools to perform minor repairs on furniture. They will also learn how to distinguish between oil stains, varnish stains, sealer stains, spirit stains and water stains; when each should be used and how to apply them. *Prerequisite: ART 1317 or divisional consent. (0-6) 3

†***ART 1319 Furniture Restoration III:** Students will further craftsmanship in removing old finishes and applying new ones, and will demonstrate the ability to perform major repairs on furniture, including chair caning, repairing inlay, repairing veneer and mending broken wood. *Prerequisite: ART 1318 or divisional consent. (0-6) 3

†**ART 1321 Printmaking I:** Students will demonstrate an understanding of silk screening as a fine art by designing and producing editions of prints which include the use of various techniques such as tusche and glue, crayon and glue, and paper or film stencils. (0-6) 3

†**ART 1322 Crafts:** Upon completion of this course, students should be able to: identify and describe major textile craft forms; design, construct and exhibit textile craft projects. Crafts will include stitchery, hand-weaving, tie-dyeing, batik and silk screening on fabric. (0-6) 3

†**ART 1323 Basic Woodcarving:** Upon completion of this course, students will be able to identify and list general characteristics of at least six different woods suitable for carving; demonstrate working use of basic carving tools and techniques (including safety and sharpening); will have completed two carving projects during the course period and demonstrated a workable woodcarving vocabulary. (0-6) 3

†**ART 1327 Sculpture I:** In this course, students will experiment with a variety of materials and methods of sculpture. They will construct and use piece molds to reproduce their clay originals. (0-6) 3

†***ART 1328 Sculpture II:** Students will continue to experiment with a variety of materials and methods of sculpture. There will be an emphasis on carving in wood and stone. *Prerequisite: ART 1327 or divisional consent. (0-6) 3

†***ART 1329 Sculpture III:** Upon completion of this course, students should have: expanded knowledge of basic sculpture; performed individual investigation and work in modeling, casting, carving and construction; experimented with recently developed media in sculpture. *Prerequisite: ART 1328 or divisional consent. (0-6) 3

†***ART 1332 Photographing Nature:** This course is designed for students wishing to develop some basic principles of nature photography, allowing them to become technically proficient at taking good nature photographs in an expeditious manner, with a reasonable degree of reliability as the final result. The course will cover the basic technical aspects of wildlife, close-up and scenic photography, with emphasis on the principles and practice of proper lighting. Students will become familiar with the basic construction and use of blinds in nature photography. *Prerequisite: ART 1384 or divisional consent. (2-2) 3

†**ART 1333 Stained Glass:** Upon completion of this course students should be able to select the proper tools and materials of the stained glass medium; demonstrate working knowledge of the Tiffany method of stained glass construction; complete three projects using the above method. (0-6) 3

†**ART 1334 Painting I:** Upon completion of this course, students should be able to select tools and materials for painting; demonstrate a knowledge of the elements of art and the principles of design as these apply to the production of painting. (0-6) 3

†***ART 1335 Painting II:** Students will continue the analysis and production of good pictorial composition and will continue experimentation in painting techniques and media. *Prerequisite: ART 1334 or divisional consent. (0-6) 3

†*Does not satisfy humanities requirement.*

†*ART 1336 **Painting III**: Students will give special attention to painting as a means of personal expression and will continue to identify and solve problems of pictorial production in color, form and spatial illusion and will continue technical experimentation. *Prerequisite: ART 1335 or divisional consent. (0-6) 3

†ART 1344 **Weaving I:** In this course, students will produce constructed textiles; employ basic rug techniques, basic tapestry techniques and basic basket techniques. Students will observe and participate in warping and dressing the loom. (0-6) 3

†*ART 1345 **Weaving II**: In this course, students will warp and dress the floor loom; study fiber and fabric construction, drafting and designing for the floor loom and will produce clothing and/or manipulated fiber constructions. *Prerequisite: ART 1344 or divisional consent. (0-6) 3

†*ART 1346 **Weaving III**: In this course, students will produce pieces demonstrating their exploration and understanding of double weave and other 4-harness floor loom pattern techniques. Students will also explore forms of ikat and dyeing to incorporate in their weaving projects. *Prerequisite: ART 1345 or divisional consent. (0-6) 3

†*ART 1347 **Weaving IV**: In this course, students will explore, design and execute one technique of fiber construction; its historical development and contemporary position in the aesthetics of the craft world. *Prerequisite: ART 1346 or divisional consent. (0-6) 3

†ART 1360 **Raku**: Students will study history, aesthetics and techniques of the raku ceramic process. They will be provided experience in glazing, kiln building and firing. (0-6) 3

ART 1364 Ceramics I: Upon completion of this course, students should be able to: design and form clay-ware by the pinch, coil and slab methods; formulate and apply glazes. (0-6) 3

†*ART 1365 **Ceramics II**: Upon completion of this course, students should be able to: design and produce ceramic projects building on the foundation of skills acquired in Ceramics I; construct one major sculpture project which will combine at least one additional material with the clay; practice basic wheel throwing methods; keep an individual test tile record of glaze experiments. *Prerequisite: ART 1364. (0-6) 3

†*ART 1366 **Ceramics III**: Upon completion of this course, students should be able to: design and produce ceramic projects building on the foundation of skills acquired in Ceramics I and II; formulate a base glaze test with variations; describe how to load, fire and unload a gas and an electric kiln. *Prerequisite: ART 1365. (0-6) 3

†ART 1374 **Jewelry I**: Upon completion of this course, students should be able to: design and produce finished metal jewelry projects; demonstrate a knowledge of and proper care for jewelry tools and equipment; demonstrate the ability to saw, file, forge, solder and finish a variety of metals. (0-6) 3

†*ART 1375 **Jewelry II**: Upon completion of this course, students should be able to: design and produce finished jewelry projects building on basic skills acquired in Jewelry I; demonstrate a knowledge of and proper care for jewelry tools and equipment including centrifugal casting equipment. *Prerequisite: ART 1374. (0-6) 3

†*ART 1376 **Jewelry III**: Upon completion of this course, students should be able to: design and produce finished jewelry projects building on the basic skills acquired in Jewelry I and II; demonstrate a knowledge of and proper care for jewelry tools and equipment. Emphasis will be on the relationship of material, function and individual approach of each student. *Prerequisite: ART 1375. (0-6) 3

†ART 1384 **Basic Camera Techniques:** Students will develop akills using their own 35mm camera. Upon successful completion of this course, students should be able to determine proper exposure under a variety of light and subject conditions, including the use of flash. Instruction and practice will be provided in camera handling, films, filters, lenses and composition. Students will take photographs using color slides, which they may have commercially processed, to demonstrate their understanding of specific camera techniques. (3-0) 3

†*ART 1385 **Photo Lab Processes I**: This is a course in basic black-and-white laboratory processes. Students will take photographs with their own 35mm cameras, as well as the 4″x5″ view camera, supplied by the instructor. They will process film from both cameras and make enlargements from that film. They will demonstrate skills in the use of certain laboratory techniques to enhance the quality of the photograph, such as control of density and contrast, burning and dodging, as well as basic photofinishing. Prerequisite: ART 1384. (1-4) 3

†*ART 1386 **Photo Lab Processes II:** Students will develop a portfolio of black-and-white photographs using their own 35mm cameras and the 4″x5″ view camera, supplied by the instructor. Upon completion of this course, students should be able to set up and operate the view camera for shooting still-lifes and portraits in the studio, as well as for correcting vertical and horizontal distortion. They should be able to calculate lighting ratios and arrange lighting set-ups for taking still lifes and portraits. They should also be able to use high contrast film, reversal film and solarization techniques to create special effects in the darkroom. *Prerequisite: ART 1385. (1-4) 3

†*ART 1389 **Color Printing I**: This is an introductory course in color printing. Upon completion of this course, students should demonstrate an understanding of basic color theory, color printing theory and the equipment and materials for color negative printing. They should be able to properly expose color negative film using their own 35mm camera and be able to make 8″x10″ color prints using those negatives. They should also demonstrate basic skills in finishing and retouching color prints. *Prerequisite: ART 1386. (1-4) 3

†*ART 1390 **Color Printing II:** Upon completion of this course, students should be able to expose color transparency film properly and make color prints from that film. They will use the view camera supplied by the instructor to shoot and print large-format transparencies. They should also demonstrate an understanding of advanced techniques in lighting and the use of color correction filters when exposing color transparency film. *Prerequisite: ART 1389. (1-4) 3

†*ART 1392 **Advanced Camera Techniques:** Upon completion of this course, students should demonstrate an understanding of critical exposure techniques, the specialized use of lenses, filters, films, composition and electronic flash. Through the use of color slides which the students shoot with their own 35mm cameras and have commercially processed, they will demonstrate an understanding of the basic elements of environmental lighting techniques, nature photography, multiple exposure and the photo essay. *Prerequisite: ART 1384. (0-3) 3

†ART 1393 **Visual Aids**: Upon completion of this course, students should be able to develop useful and effective audio-visual materials using overhead transparencies, 2″x2″ slides, filmstrips and audio recording equipment. They should be able

to use and do basic maintenance on audio-visual equipment. (2-2) 3

†**ART 1394 That Old House I:** Upon completion of this course, students will be able to identify architectural styles, research a property, be familiar with appropriate procedures for restoration or preservation of a structure, as well as interior furnishing and landscaping for a historic property. Students should also be knowledgeable concerning appropriate state and federal organizations to give assistance with various historic projects. (2-2) 3

†***ART 1395 That Old House II:** Upon completion of this course, students will be able to identify and negotiate with resource organizations and the various contractors (i.e., plumbing, electrical, general) necessary for the restoration and preservation of a structure. Students study additional restoration problems not covered in That Old House I. *Prerequisite: ART 1394. (2-2) 3

†**ART 1404 General Drawing I:** This course introduces the students to many of the problems (and their possible solutions) in representing visual experience on the two-dimensional surface. Students will experiment with the widest practical variety of tools, materials and techniques of drawing, and will learn to use these techniques and combinations of tools and materials as a means of personal expression and communication of experience. They will also be introduced to linear perspective and basic concepts of composition. (2-4) 4

†***ART 1405 General Drawing II:** Upon completion of this course, students will have been introduced to the study of perspective and other systematized methods of rendering the illusion of form and space. They should be able to apply elements of good pictorial composition and will have continued to develop technical competence in the use of a variety of materials and techniques in drawing. *Prerequisite: ART 1404 or divisional consent. (2-4) 4

†***ART 1406 General Drawing III:** In this course students will work toward the use of drawing as a means of personal expression and will concentrate on the development of direction and method in their work. *Prerequisite: ART 1405 or divisional consent. (2-4) 4

†**ART 1424 Design I:** Upon completion of this course, students should be able to identify and use the principles and elements of design as these relate to two-dimensional surface. Flat pattern development, pictorial composition, depiction of spatial illusion and value analysis will have been studied. (2-4) 4

†***ART 1425 Design II:** Students will examine and explore basic color theories. With this basis, individual color solutions, particularly as they might apply to practical communications problems, will be explored. The elements and principles of design will continue to be explored. *Prerequisite: ART 1424 or divisional consent. (2-4) 4

†***ART 1426 Design III:** Students will continue the study of principles of design and will employ these principles for works in both two and three dimensions. Emphasis will be upon personal solutions to design problems. *Prerequisite: ART 1425 or divisional consent. (2-4) 4

†***ART 1434 Airbrush:** Upon completion of this course, students will be able to use the airbrush to convincingly render forms, make flat applications, gradations and freehand lines. Students will be able to do color masking, basic photo retouching and take proper care of airbrush equipment. *Prerequisite: ART 1426, ART 1406, ADV 3401. (2-4) 4

†***ART 2300 Advanced Stained Glass:** Upon completion of this course, students should be able to show progress in glass cutting and pattern design; demonstrate a working knowledge of the lead came method of stained glass construction; complete three projects using the above method. *Prerequisite: ART 1333 or divisional consent. (0-6) 3

†***ART 2304 Individual Studio:** A course designed to permit the individual student or group to work beyond the limits of the regular course offerings on self-determined objectives utilizing the resources of the Art Division. *Prerequisite: Completed sequence of art courses in the area of proposed independent study. (0-6) 3

†**ART 2322 Surface Design for Textiles:** Introduction to major types of process for non-constructed textiles. Exploration of surface design and pattern. Techniques: stamping, stencil and resists, tie-dye, sew and dye, batik, and silk-screening on fabric. (0-6) 3

†**ART 4201 Commercial Art Orientation:** Upon completion of this course, students should: be familiar with the Advertising Design and Interior Design programs offered at CPCC; have met the Art Division faculty; be better able to use CPCC facilities such as the library, Drop-In Center, etc.; be able to make a better-informed choice of career goals and the program and courses which will serve them best. (2-0) 2

**Does not satisfy humanities requirement.*

Automotive Body Repair

AUB 5100 Seminar I:
AUB 5101 Seminar II:
AUB 5102 Seminar III: Upon completion of these courses, students should be able to: discuss the typical day to day operations in an auto body repair shop; describe typical problems and their solutions. (1-0) 1

AUB 5200 Basic Auto Body Repair: Upon completion of this course, students should be able to: repair minor dings and dents in auto body sheet metal; fill small rust holes; sand and prepare an auto body panel for spot or panel painting; use a spray gun to spot paint; use hand and power tools properly and safely. (1-3) 2

AUB 5201 Trim and Glass: Upon successful completion of this course, students should be able to: disassemble, rebuild and reassemble automobile doors; remove and install windshields and back glass; aim headlights; remove and install seat covers and side trim. (1-3) 2

AUB 5202 Auto Renewal: Upon completion of this course, students should be able to: clean and repaint engines; clean and dye seats and doors; clean and dye headliners and carpets; renew trunk and engine compartments; buff and polish exterior surfaces; clean and restore chrome; clean and dress vinyl tops and convertible tops. (1-3) 2

AUB 5203 Estimating Auto Body Damage: Upon completion of this course, students should be able to: read a crash estimating guide; prepare a damage estimate; interpret an estimate; estimate straight time costs; identify unibody and conventional auto body parts; analyze damage repairs on actual vehicles. (2-0) 2

***AUB 5214 Door and Fender Alignment:** Upon completion of this course, students should be able to: align the hood, fenders, doors, and deck lids of automobiles; replace the chassis sheet metal of a car as a unit. *Corequisite: WLD 5210. (1-3) 2

*AUB 5223 **Fiberglass and Metallic Fillers:** Upon completion of this course, students should be able to: solder fill minor dents; fiberglass fill small cracks and openings; use powdered metal to fill rusted areas; finish minor body defects using hammer and dolly files, grinders, sanders and related tools. *Corequisite: AUB 5421. (1-3) 2

*AUB 5224 **Panel Installation:** Upon completion of this course, students should be able to: remove damaged sheet metal panels; use a power chisel; install partial panels, patch panels and full panels; use pop rivets; use a panel spotter and wire spot welder. *Corequisite: AUB 5421. (1-3) 2

*AUB 5233 **Lacquer Painting:** Upon completion of this course, students should be able to: spray paint using various lacquers; sand and prepare a car for lacquer painting; buff and finish a car after lacquer painting; spot paint using lacquer paint; seal and paint lacquer over old surfaces. *Corequisite: AUB 5431. (1-3) 2

*AUB 5234 **Enamel Painting:** Upon completion of this course, students should be able to: sand and prepare a car for enamel painting; spray paint using various enamel paints; paint a single panel using enamel paint. *Corequisite: AUB 5431. (1-3) 2

*AUB 5235 **Special Finishes:** Upon completion of this course, students should be able to: spray paint a vinyl top; paint trunk compartments; paint plastic parts; pinstripe; use various custom paints; mask and stripe for special effects; use an air brush properly. *Corequisite: AUB 5431, AUB 5233. (1-3) 2

*AUB 5344 **Body Shop Applications:** Upon completion of this course, students should be able to: use all techniques covered in the previous Automotive Body Repair courses; make actual collision repairs using the same methods and practices as recommended by the automobile manufacturers and related industry. *Prerequisite: ALL AUB prefix courses first three quarters. (0-9) 3

*AUB 5345 **Body Shop Applications II:** A continuation of AUB 5344. *Prerequisite or Corequisite: AUB 5344. (0-9) 3

*AUB 5346 **Body Shop Applications III:** A continuation of AUB 5345. *Prerequisite or Corequisite: AUB 5345. (0-9) 3

*AUB 5347 **Body Shop Applications IV:** A continuation of AUB 5346. *Prerequisite or Corequisite: AUB 5346. (0-9) 3

AUB 5412 **Frame and Unitized Body Alignment:** Upon completion of this course, students should be able to: use frame gages; use hydraulic tools for straightening auto body damage; align body openings; describe the types of main frame damage; tie down a car; use a frame machine to straighten frame damage. (2-6) 4

AUB 5421 **Metal Finishing and Plastic Fillers:** Upon completion of this course, students should be able to: shrink sheet metal; use a hammer and dolly; rough out and fill dents; finish dents with plastic fillers; use a grinder, body file and long sander. (2-6) 4

AUB 5431 **Paint Equipment and Preparation:** Upon completion of this course, students should be able to: disassemble, clean and reassemble a paint spray gun; maintain a spray paint system; select spray paint equipment; sand and mask a car in preparation for painting; use the basic techniques of spray painting; mix and spray undercoats, sealers and various kinds of paint systems; prepare various panels for topcoat applications. (2-6) 4

Automotive Mechanics/ Technology

AUT 4300 **Automotive Emissions Systems:** Upon completion of this course, students should be able to: describe the operation of emission control systems used on current production automobiles and light trucks; state, federal, N.C. State and local laws relating to emission standards; troubleshoot, test and service emission control systems. (2-2) 3

*AUT 4308 **Auto Servicing:** Upon completion of this course, students should be able to: describe the flat rate hour system; diagnose and make basic repairs in all automotive systems; discuss and solve service management and customer relations problems. *Prerequisite: Seventh quarter standing in Automotive Mechanic Technology. (1-6) 3

*AUT 4401 **Automotive Electronics:** Upon completion of this course, students should be able to: describe conventional current theory; solve series, parallel and series-parallel circuit problems; use analog and digital meters to wire and troubleshoot electronic circuits; describe semi-conductors and electrical sensors as they are used in automotive computer systems; read and interpret wiring diagrams. *Prerequisite: AUT 5415, AUT 5416, or permission of program director. (3-2) 4

*AUT 4402 **Instrumentation and Chassis Electrical Systems:** Upon completion of this course, students should be able to: describe the operation and circuitry involved in automotive instrumentation; describe the operation and related circuitry in chassis electric components; troubleshoot and service automotive instruments and chassis electrical cmponents. *Prerequisite: AUT 5415, AUT 5416, or permission of program director. (3-2) 4

*AUT 4406 **Computer Controlled Fuel Systems:** Upon completion of this course, students should be able to: describe the operation of, diagnose problems in, disassemble, repair as necessary and reassemble typical fuel injection and computer controlled carburetion systems. *Prerequisite: AUT 5205, AUT 5415, AUT 5405, or permission of program director. (3-2) 4

*AUT 5205 **Fundamentals of Computer Controlled Fuel Systems:** Upon completion of this course, students should be able to: discuss the operation of typical automotive onboard computers; describe automotive computer input and output devices; use diagnostic troubleshooting charts to describe trouble shooting procedures in typical computer-controlled fuel systems. *Prerequisite: AUT 5405 or program director's approval. (2-0) 2

*AUT 5212 **Electrical Testing:** Upon completion of this course, students should be able to: operate automotive diagnostic equipment; demonstrate use of shop manuals; demonstrate an understanding of automotive and truck wiring systems. *Prerequisite: AUT 5415. (1-3) 2

AUT 5254 **Automotive Heating and Air Conditioning:** Upon completion of this course, students should be able to: describe the operation of automotive heating and air conditioning systems, including electrical and mechanical controls; demonstrate competencies in the testing, service, and repair of the systems and system components; describe the safety precautions that must be taken when handling refrigerants and working with pressurized heating and air conditioning systems. (1-3) 2

*AUT 5295 **Auto Mechanics COOP:** Upon completion of

this course, students should be able to: produce a master work log sheet containing the various types and number of job tasks completed in an automotive service agency during this cooperative work experience; demonstrate the acquired skills to make the transition from the classroom and lab to an actual job in the automotive industry with little or no difficulty. *Prerequisite: fourth quarter standing in Auto Mechanics program. (0-20) 2

AUT 5303 Preventive Maintenance and Safety Inspection: Upon completion of this course, students should be able to: describe and perform preventive maintenance requirements on automotive vehicles; use mileage maintenance schedules; describe and perform North Carolina Safety/Emission Inspections. (2—0—2) 3

***AUT 5307 Auto Electrical and Fuel Systems Applications:** Upon completion of this course, students should be able to: perform tasks required in the service and repair of basic automotive electrical and fuel systems. Tasks will be performed on live vehicles using manufacturers' recommended procedures. Evaluation will be based on accuracy and proficiency using flat rate time as a factor. *Prerequisite: AUT 5405, AUT 5415, AUT 5416. (1-6) 3

***AUT 5308 Auto Chassis and Suspension Systems Applications:** Upon completion of this course, students should be able to: perform tasks required in the service and repair of automotive suspension, steering, and braking systems. Tasks will be performed on live vehicles using manufacturers' recommended procedures. Evaluation will be based on accuracy and proficiency using flat rate time as a factor. *Prerequisite: AUT 5404. (1-6) 3

AUT 5401 Internal Combustion Engines I: Upon completion of this course, students should be able to: describe engine components and operation, disassemble per a worksheet, measure parts for excessive wear, reassemble and run selected automobile engines, American or foreign, and make necessary adjustments according to manufacturers' specifications. (2-6) 4

***AUT 5402 Internal Combustion Engines II:** Upon completion of this course, given a complete operable automobile, students should be able to: remove and replace the following parts on the engine; head gasket(s), front crankshaft seal, rear crankshaft seal; remove and replace timing chain, gear or belt; grind valves and reface seats on cylinder heads and make necessary adjustments according to manufacturers' specifications. *Prerequisite: AUT 5401. (2-6) 4

AUT 5403 Basic Calculations for Auto, Diesel and Power Mechanics: Upon completion of this course, students should be able to: apply the principles of addition, subtraction, multiplication and division to problems related to the automotive field; use the functions of ratio and proportion to solve gear, crankshaft and pulley problems; read a ruler, micrometer and feeler gage accurately; use area and volume formulas; apply angular and geometric measurement to cylinder, chassis and flywheel problems; understand scale measurement; discuss measurement in terms of the metric system as well as the English system. (4-0) 4

AUT 5404 Auto Chassis and Suspension Systems: Upon completion of this course, students should be able to: describe the operation of and repair as necessary the following components: manual and power steering, front and rear suspension units, drum and disc type brakes; check and adjust front and rear end alignment angles; balance wheels. (2-6) 4

AUT 5405 Basic Automotive Fuel Systems: Upon completion of this course, students should be able to: disassemble, describe the operation of, repair as necessary, and reassemble major United States manufacturers' carburetors; describe the operation and construction of carburetors, fuel pumps, intake and exhaust systems; perform typical carburetor adjustments on the car. (2-6) 4

AUT 5415 Electrical Systems I: Upon completion of this course, students should be able to: disassemble, repair as necessary, reassemble and test automobile alternators, starters, distributors and electrical accessories; describe the operation and construction of the above automobile components. (2-6) 4

***AUT 5416 Electrical Systems II:** Upon completion of this course, students should be able to: operate automotive electrical diagnostic equipment; perform the procedures used for a major automotive tune-up on typical vehicles. *Prerequisite: AUT 5415. (2-6) 4

AUT 5425 Auto Power Train Systems I: Upon completion of this course, students should be able to: describe the operation of, disassemble, repair as necessary, and reassemble the following components: clutches, manual transmissions (three, four, and five speed), drive lines, and differential units. (2-6) 4

AUT 5426 Auto Power Train Systems II: Upon completion of this course, students should be able to: describe the operation of, diagnose problems, and repair the following typical automatic transmissions: General Motors THM 200, THM 350, Ford C-4, and Chrysler torque flite. (2-6) 4

***AUT 5427 Auto Power Train Systems III:** Upon completion of this course, students should be able to describe the mechanical power flow and trace the hydraulic oil flow in automatic overdrive and automatic transaxle transmissions, diagnose problems in, disassemble, repair as necessary, and reassemble automatic overdrive and automatic transaxle transmissions. *Prerequisite: AUT 5426. (2-6) 4

Banking and Finance

BAF 3300 Introduction to Commercial Lending: Upon completion of this course, students should be able to: describe the lending function of a commercial bank; prepare financial reports using accepted formats; explain loan department functions and interaction with loan customers; apply the steps in the decision process as it involves structuring the loan; apply proper procedures in problem loans; manage the loan portfolio; explain the influence of regulations; describe the business development function. (3-0) 3

BAF 3400 Principles of Banking: This course will focus on the basic functions and operations of banking and a working knowledge of the operation of a bank. Upon completion of this course, students should be able to: perform basic functions of commercial banking; demonstrate working knowledge of the operation of a commercial bank in the management of bank funds, bank control systems, and paying teller operations; identify and define the principles underlying the main objectives sought in banking operations. (4-0) 4

BAF 3401 Bank Management: This course is designed to provide the prospective bank manager with a practical and conceptual grounding in bank management. It examines the issues that bank managers deal with on a daily basis, including staffing and management controls, and organizational planning. Upon completion of this course, students should be able to: formulate objectives and policies; interpret deposit, loan and

trust functions; describe current banking issues; describe use of bank funds; explain bank investment accounts; interpret the art of management; demonstrate cases in bank management. (4-0) 4

BAF 3401 Law and Banking: This course is designed to equip students with a non-technical, clear understanding of all aspects of the legal system that directly affect banks. Upon completion of this course, students should be able to: describe the court system and civil procedures; define consumer protection; describe and explain negotiable instruments and secured transactions. (4-0) 4

BAF 3403 Money and Banking: This course is designed to present basic economic principles as they relate to banking. Upon completion of this course, students should be able to: explain the economy and how it works; describe the Federal Reserve System and the business of banking as related to these areas; define the monetary policy and its impact on financial markets and banks; discuss alternative theories of money's role in the economy; state fiscal policy; interpret trends in banking. (4-0) 4

BAF 4403 International Banking: Upon completion of this course, students should be able to: describe the basic framework and fundamentals of international banking; explain how money is transferred from one country to another; discuss the methods of financing international trade; list and describe the international agencies involved with international currency markets. (4-0) 4

BAF 4404 Branch Management: Upon completion of this course, students should be able to: demonstrate an ability to implement management by objectives; conduct performance evaluations; resolve personnel conflicts; perform the lending function—loan documentation, collateral, financial statements; describe branch organizational structure, teller and platform functions; supervise branch operations including budgeting. (4-0) 4

BAF 4405 Corporate Banking: A Practical Approach to Lending: Upon completion of this course, students should be able to: describe management issues and lending policies; demonstrate ability to perform the role of account officer; apply methods of analysis to loan requests; perform functions of loan structuring, pricing, documentation and administration; analyze problem loans—causes, defenses and resolutions. (4-0) 4

BAF 4408 Inside Commercial Banking: This course, an advanced introduction to the banking system, provides a topical look at the changing role of banks. Emphasis is conceptual rather than operational. Designed to familiarize students with the broader issues facing the banking industry, it includes changes necessitated by technological advances, recent legislation, and new approaches to global banking. Upon completion, students should be able to: name the historical highlights of the banking industry; identify effective bank management—planning, structure and control; identify sources and uses of funds—changes and growth; define wholesale and retail banking; explain electronic funds transfer systems; define multinational banking; define specialized services—trust and cash management; identify regulatory constraints; discuss state issues and challenges for the future. (4-0) 4

BAF 4409 Consumer Lending: This course emphasizes pragmatic "how-tos" that detail the many types of credit arrangements in which a finance charge is paid for the privilege of repaying debts in delayed payments. Upon completion of this course, students should be able to: identify collection policies and procedures; explain principles of credit evaluation; describe marketing bank services; define open-end credit; identify direct lending; explain the leasing of consumer goods; identify the legal aspects of installment credit; conduct financial statement analyses; identify rate structure and yield analysis; describe indirect lending; explain insurance for installment lending; use appropriate techniques in organizing and managing an installment loan department. (4-0) 4

BAF 4410 Bank Investments: This course presents the factors that affect investment strategies and decisions, grounded in a framework of fundamental investment concepts such as risk, liquidity and yield. The basic characteristics of the major types of bank investments are studied, along with the relationship of investment management to other areas of banking and the national economy. Upon completion of this course, students should be able to: identify and describe securities (U.S. Treasury, federal agency, state and local); define revenue bonds, money market investments, securities markets; explain investment objectives (short-term and long-term); identify tax factors in bank investment; explain primary and secondary reserves; and define investment accounts; maturity strategies. (4-0) 4

BAF 4411 Loan Officer Development: Upon completion of this course, students should be able to: conduct loan interviews and identify problems; demonstrate ability in the subjective skills and judgment-forming abilities needed throughout the lending process; demonstrate decision-making under conditions of uncertainty and time pressures; apply listening and remembering skills. (4-0) 4

BAF 4412 Marketing for Bankers: This course provides a thorough grounding in basic marketing principles and theory and their practical application to the banking industry. Upon completion of this course, students should be able to: conduct marketing in the organization; interpret consumer motivation and buying behavior and apply marketing information and research to this area of banking; identify and explain the marketing management process—situational analysis, formulation of a master marketing strategy, performance monitoring and evaluation; demonstrate knowledge of marketing as it relates to the wholesale side of banking; describe the significance of public relations and communications to the banking industry. (4-0) 4

BAF 4413 Negotiable Instruments and the Payments Mechanism: Upon completion of this course, students should be able to: describe the legal aspects of bank operations; identify and utilize various forms of commercial paper; apply procedures of check handling and payment mechanisms; conduct deposit and collection activities; describe payor bank and its customer drawer activities. (4-0) 4

BAF 4415 Savings and Time Deposit Banking: Upon completion of this course, students should be able to: describe financial institutions—competition and savings; discuss management of bank funds; identify types of savings and time deposits; explain operations and controls; explain regulation and examination of banks; discuss bank marketing strategies; discuss the impact of automation. (4-0) 4

BAF 4416 The Trust Business: This course provides an overview of the trust department. Upon completion of this course, students should be able to: explain the role of the trust department in a commercial bank and how it fits into the overall banking business; identify the services provided and how they are delivered; describe the changing role of the trust department. (4-0) 4

BAF 4418 Savings Banking Today: Upon completion of

this course, students should be able to: discuss the organization of savings institutions; describe bank marketing techniques; apply appropriate procedures for deposits, checks and check processing; identify fund management strategies; process consumer loans; explain savings bank life insurance. (4-0) 4

BAF 4420 Deposit Operations: This course emphasizes the deposit operations of banks in the context of the U.S. payments systems. Emphasis is placed on systems rather than product or instrument. Upon completion of this course, students should be able to: explain how banks operate relative to their deposit-taking activities and management of deposited funds; describe the impact of the external environment on determining why banks operate the way they do; demonstrate a knowledge of government rules and regulations; and discuss trends of America's payment mechanisms. (4-0) 4

Biology

BIO 1500 Biological Science: A foundation course designed to introduce selected fundamental biological principles. Upon completion of this course, students should be able to demonstrate an understanding of the following topics: the cell, reproduction, genetics, embryology, transport mechanisms, photosynthesis, respiration, evolution and ecology. (3-4) 5

BIO 1501 General Botany: An introductory study of green and non-green plants. Upon completion of this course, students should be able to demonstrate a knowledge of the following topics: plant cell structure and function, taxonomy, reproduction, genetics, mineral nutrition and ecology. (3-4) 5

BIO 1502 General Zoology: An introductory study of the major groups of animals. Upon completion of this course, students should be able to demonstrate knowledge of animal anatomy, physiology, homology, ecology, life histories, classification and evolution. (3-4) 5

BIO 1503 Microbiology: An introduction to the world of microorganisms—bacteria, viruses, fungi, protozoa and Rickettsia—with emphasis upon bacteria. Students, upon completion of this course, should have gained knowledge of the structure of microorganisms, interrelationships among them, factors influencing their growth, and how they affect humans. (3-4) 5

BIO 1504 Human Anatomy and Physiology I: An introductory course in the normal structure and function of human body systems, emphasizing interrelationships of each. Upon completion of this course, students should be able to demonstrate knowledge of the following: cellular biology, tissues, skeletal, muscular, nervous and sense organs. (3-4) 5

BIO 1505 Human Anatomy and Physiology II: A continuation of BIO 1504 with emphasis on the following: circulatory, respiratory, digestion, endocrine, reproduction, urinary, acid base and water-electrolyte balance. (3-4) 5

BIO 2300 Genetics: A study of the fundamental laws of heredity with emphasis on human heredity. Having completed this course, students should be able to demonstrate a working knowledge of the behavior of chromosomes and genes, mutation and chromosomal abnormalities and quantitative inheritance, gene and chromosome structure, cytoplasmic inheritance, evolution, population genetics, environment and heredity, and eugenics. (3-0) 3

BIO 2304 Human Nutrition: Upon completion of this course, students should be able to identify sources and functions of nutrients and relate them to the life cycle and have a basic understanding of principles of interviewing relating to nursing. (3-0) 3

BIO 2305 Dental Nutrition: Upon completion of this course, students should be able to identify sources and functions of nutrients and relate them to the life cycle and have a basic understanding of principles of interviewing relating to dental hygiene. (3-0) 3

BIO 2500 Introduction to Entomology: A basic course designed to give a practical approach to the study of insects. Upon completion of this course, students should be able to demonstrate a knowledge of the fundamentals of insect classification, development, food habits and controls. (3-4) 5

BIO 2501 Ornithology: An introduction to the study of birds. Upon completion of this course, students should be able to demonstrate knowledge of anatomy, physiology, ecology, life histories, behavior, evolution, and identification of birds. (3-4) 5

BIO 2134-2534 Selected Topics in Biology: These courses are offered in order to comply with the needs of students who want subject matter not included in other courses offered by the Biology Department. Upon completion of this course, students should have an understanding of such courses as: Animal Behavior, Marine Biology, General Ecology, Embryology, Histology, Exercise Physiology, Parasitology, Physiology, Crop Plants, Local Flora, Plant Anatomy and Plant Morphology. TBA

BIO 2514 Vertebrate Zoology: An introductory study of the vertebrate animals. Upon satisfactory completion of this course, students should be able to demonstrate knowledge of vertebrate anatomy, physiology, embryology, systematics, homology, life histories, ecology, behavior, and evolution. (3-4) 5

BIO 3301 Basic Health Science I: An introductory course in the normal structure and function of the human body. Upon satisfactory completion of this course, students should be able to discuss the anatomy, physiology, and interrelationships of the following: cells-tissue, skeletal system, muscular system, circulatory system, respiratory system, and urinary system. (3-0) 3

BIO 3302 Basic Health Science II: A continuation of BIO 3301 with emphasis on the following: nervous system, sense organs, integumentary system, digestive system, endocrine system, reproductive system. (3-0) 3

BIO 3404 Cardio-Pulmonary Anatomy and Physiology: A specialized course to provide an in-depth study of cardiovascular and respiratory functions and their interrelationships. Upon completion of this course, students should be able to demonstrate an understanding of Circulatory and Respiratory Anatomy and Physiology. Emphasis is placed on the interpretation of blood-gas measurements. (3-2) 4

Biology—Advancement Studies

BIO 9500 Introduction to Biology: An individualized instruction course for students who need to update or review basic concepts in Biology. Upon completion, students should be able to demonstrate an understanding of six of the following units: Cell Structure and Function, DNA, Meiosis and Mitosis, Heredity, Biochemistry, Respiration and Photosynthesis, Microbiology, Human Anatomy, Classification, Embryology, Nutrition, Ecology. Highly recommended prerequisite or corequisite: EDU 9300. (5-0) 5

Business

BUS 1400 Introduction to Business: Upon completion of

this course, students should be able to: describe the legal and economic environment of business; discuss the basic types of internal and external business forms; describe the functions of business; discuss the role of management in the business enterprise. (3-2) 4

BUS 2304 **Business Law I:** This course is primarily concerned with contracts, their creation and discharge as applied to business and everyday life. Upon completion of this course, students should be able to: list the elements of a contract and apply them to factual situations; analyze situations that will preclude the assent necessary to form a contract and explain when a contract must be in writing; differentiate between situations that will cause a breach of contract; recognize personal and business crimes and torts; discuss contract law and the effect of the Uniform Commercial Code on contracts. (3-0) 3

*BUS 2305 **Business Law II:** This course continues the study of the Uniform Commercial Code and other business laws. Upon completion of this course, students should be able to: demonstrate a working knowledge of commercial paper and secured transactions; recognize and define a sale of goods; differentiate between common law contracts and those under Article II of the UCC; apply various common terms such as FOB, COD, sale or return, sale on approval to various situations and recognize which party has the risk of loss as well as being able to apply the rules for performance of a sales contract; recognize and distinguish various types of warranties; discuss the various terms and forms applicable to secured transactions; distinguish negotiable instruments from ordinary contracts; recognize a holder in due course; demonstrate a general knowledge of the banking functions. *Prerequisite: BUS 2304 or consent of division head. (3-0) 3

*BUS 2306 **Business Law III:** Upon completion of this course, students should be able to: distinguish agency from other relationships; list the different ways to create the agency relationship; define the various types of authority; list the various ways the agency relationship can be terminated; list the classifications of property and their main characteristics; list the elements of a bailment, enumerate the classifications of bailments and analyze the standards of care applied to each class; list and explain the rights and liability of partners; define the causes and grounds for dissolution of the partnership; distinguish a corporation from other forms of business organization; list the various ways to finance a corporation; list the various rights of stockholders; differentiate between a stockholder's role and a director's role in corporate management; list the different types of estates in land and their characteristics; list the requirements of formal wills. *Prerequisite: BUS 2304 or consent of division head. (3-0) 3

BUS 3300 **Human Relations:** This course is primarily designed to allow students to learn and practice skills which enhance effective interactions in the work environment. Upon completion of this course, students should be able to: define and trace the development of the human relations field; communicate effectively; explain and apply motivational techniques; understand and apply their own creative potential; recognize job stress and develop strategies coping with stress; resolve various job conflicts; discuss ego states and life scripts; describe the behavioral characteristics of the Geier Profile personality traits. (3-0) 3

*BUS 3304 **Business Statistics:** Upon completion of this course, students should be able to: differentiate between descriptive and inferential statistics; calculate measures of central tendency and variability; employ "z" tables; discuss probability theory and its uses; calculate regression and correlation coefficients. *Prerequisite: FIN 3315 or MAT 3504. (3-0) 3

BUS 4340 **Consumer Credit:** Upon completion of this course, students should be able to: discuss the role of credit in the American economy; list the major characteristics of retail revolving, charge and installment credit; discuss the principles of consumer credit management; describe the process of credit investigation; discuss the role of various consumer credit institutions; apply knowledge to the development of a "case" consumer credit department. (3-0) 3

BUS 4341 **Commercial Credit:** Upon completion of this course, students should be able to: differentiate between consumer and commercial credit; discuss business use of credit; define the role of the commercial credit manager; list and discuss the sources of credit information; differentiate between various credit institutions; analyze financial statements; develop a set of credit standards for a business; apply those standards to a "case" commercial credit department. (3-0) 3

*BUS 4394 **Individual Study—Business Administration:** This course provides students with the opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment will provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. *Prerequisite: Approval of the sponsor, division head and appropriate vice president is required. (3-0) 3

Business Administration

*MGT 2314 **Principles of Management:** An introductory course in business management principles. Upon completion of this course, students should be able to: describe the functions of managers; define management planning; recognize sound business objectives; illustrate organizational charts; design a staffing program; explain and apply leadership and decision-making to business cases; identify control measures useful to business operations. *Prerequisite: BUS 1400. (3-0) 3

MGT 3303 **Small Business Management:** A course designed for those who may want to start and operate their own business, as well as those who are already business owners but wish to strengthen their entrepreneurial and management skills through development of a small business plan. Upon completion of this course, students should be able to: assess the opportunities and risks involved in the small business; apply the techniques involved in starting a new venture including the legal aspects and development of a business plan; explain the techniques and principles of planning, organizing, directing and controlling the operating venture; explain the methods of operating the three basic types of small businesses—retail stores, service businesses and small manufacturing plants. (3-0) 3

MGT 4330 **Supervision:** An introductory course in application of management principles and concepts to first-line supervisory positions. Upon completion of this course, students should be able to: identify the position of the supervisor in the management structure; discuss the unique interpersonal relations required of the supervisor; identify manpower management techniques; explain the concept of job analysis and evaluation; describe supervisory leadership techniques for various job groups; evaluate the supervisor's role in labor relations. (3-0) 3

MGT 4331 **Administrative Office Management:** A course applying the principles and techniques of management to the

flow of information within an enterprise. Upon completion of this course, students should be able to: explain the application of principles of management to office organization; design an office layout; describe the psycho-physiological factors in office design; analyze the lease-buy decision on equipment and facilities; design a basic word processing system; describe reprographic, micrographic and telecommunications functions. (3-0) 3

MGT 4332 Personnel Management I: An introductory course in the field of human resources management. Upon completion of this course, students should be able to: describe the application of management principles to human resources; describe the history of personnel management; list and describe sources used in internal and external recruiting; design a personnel selection procedure; formulate employee and management development plans; identify systems used for employee performance evaluation. (3-0) 3

***MGT 4333 Production, Planning and Control:** A course providing a survey of the planning, function and control of the production process in a manufacturing organization. Upon completion of this course, students should be able to: recognize and explain the underlying principles of production management; identify and illustrate the planning concepts used in a production system; demonstrate the scheduling of machine and personnel assets; explain the process of inventory control; outline the procedures used in quality control. *Prerequisite: MGT 2314, BUS 3304. (3-0) 3

***MGT 4334 Management Seminar:** A course which expands the knowledge of principles and techniques acquired in prerequisite courses and relates that knowledge to practical situations concerning the development of management strategy and policy through the techniques of lecture, case studies and critical incident analysis. Upon completion of this course, students should be able to demonstrate improved deductive and decision-making capabilities through use of the case method and be able to develop practical management strategies and policies to aid in organization-wide problem solving. *Prerequisite: MGT 2314. (3-0) 3

***MGT 4337 Personnel Management II:** A course providing a continuation of the study of basic personnel management practices. Upon completion of this course, students should be able to: define the factors in organizational climate; identify the channels of management communications; review the concept of managerial leadership; interpret the importance of labor relations in human resources management; design a basic wage and salary plan; outline a basic security and benefit system; and identify the role played by EEO, safety and health and financial incentive plans in personnel management. *Prerequisite: MGT 4332. (3-0) 3

***MGT 4338 Labor-Management Relations:** A course which examines the basic principles and strategies used in labor-management relations. Upon completion of this course, students should be able to: recognize the rights and responsibilities of both labor and management; describe the negotiation and administration of a labor agreement; identify various labor outcomes such as: discipline, labor security, minority rights, technological changes and wage/benefit issues; apply the labor relations process to governmental personnel matters and identify the differences between public and private personnel procedures. Students having prior work experience in management may substitute their experience for the prerequisites with consent of Division Head. *Prerequisites: MGT 4332 and MGT 4337, or consent of Division Head. (3-0) 3

MGT 5200 Shop Management: A course designed to introduce the trade student to the business world and to the operation of a small business. Upon completion of this course, students should be able to: describe the importance of the small shop in the economic system; identify problems in small business operations; assemble a set of guidelines for starting a small shop; recognize the importance of business law and the maintenance of business forms and records; gain an appreciation for the role of location, taxes, inventory, advertising and employee relations in the success of a small shop. (2-0) 2

Chemistry

CHM 1500 Introductory Chemistry: An introductory course with laboratory experiences designed for students with little or no background and no prior interest in chemistry. The topics integrate basic chemical principles with environmental and technological applications. Upon completion of this course, students should be able to demonstrate an understanding of some of the basic concepts of chemistry and their applications. (3-4) 5

***CHM 1501 Chemistry for the Health Professions I:** A general chemistry course designed for students preparing for a career in the allied health areas such as nursing, dental hygiene, respiratory therapy; also for the student in the liberal arts. Topics include a study of the fundamental concepts, laws and theories of inorganic chemistry with laboratory experimentation. Upon completion of this course, students should be able to demonstrate an understanding of basic chemical principles of inorganic compounds. *Prerequisite: high school chemistry, high school algebra, or MAT 9510. (3-4) 5

***CHM 1502 Chemistry for the Health Professions II:** A continuation of CHM 1501 with laboratory experimentation which includes an introduction to organic chemistry and biochemistry. Upon completion of this course, students should be able to demonstrate an understanding of the chemistry of carbohydrates, lipids, proteins, nucleic acids, enzymes, vitamins and hormones and their role in metabolic processes. CHM 1502 may be of interest to students entering the fields of biology, medicine or dentistry, as an introduction to biochemistry. *Prerequisite: CHM 1501. (3-4) 5

***CHM 1503 Dental Hygiene Chemistry:** A one-quarter course designed for dental hygiene students. It is made up of units of general chemistry followed by some organic and biochemistry. Upon completion of CHM 1503, students should be able to demonstrate competency in general chemistry, introductory organic chemistry and the chemistry of carbohydrates; knowledge of lipids, proteins as well as the functions of enzymes and hormones. *Prerequisites: high school chemistry; high school algebra, or MAT 9510 (3-4) 5

***CHM 1504 General Chemistry I:** A study of the fundamental principles and laws of chemistry with emphasis on the relationship of atomic structure to physical and chemical properties of the elements. Individualized lab experiments deal with the verification of chemical laws and the development of problem-solving skills. Applications of chemical principles will be made in the area of environmental problems such as energy and pollution. After completing this course, students should be able to: apply the scientific method in problem solving; demonstrate the basic laboratory techniques for successfully and safely conducting chemical experiments; solve problems and demonstrate an understanding and appreciation of certain chemical laws, principles, concepts and theories such as: metric system,

atomic structure, laws of chemical combinations, stoichiometry, gas laws, kinetic molecular theory, theory of chemical bonding and simple nomenclature; relate the knowledge of chemistry to the real world such as identifying specific societal problems created and/or solved by the science of chemistry. The following students should take the CHM 1504, CHM 1505, CHM 1506 sequence: students with major emphasis in forestry, agriculture, dentistry, optometry, paramedics, medicine, pharmacy, nursing (B.S. degree), geography, textiles, chemical technology, geology, biology, and any other areas of science and math. *Prerequisite: MAT 9510 or two years of high school algebra and/or the following: Corequisite: MAT 1504 or MAT 1514 or MAT 3504 or departmental consent. (3-4) 5

*CHM 1505 General Chemistry II: A continuation of CHM 1504, with emphasis on chemical equilibrium, kinetics, solution stoichiometry, acid-base theories, and electrochemistry. Some chemical application will be made in the areas of environmental problems, biological systems and industrial processes. After completing this course, students should be able to: solve problems dealing with systems in equilibrium; solve solution problems; recognize and apply various acid-base theories to chemical equations; demonstrate an understanding of such things as redox potentials, reactions kinetics, and colligative properties of solutions. *Prerequisite: CHM 1504 or departmental consent. (3-4) 5

*CHM 1506 General Chemistry III: A continuation of CHM 1505 with emphasis on ionic equilibrium and relating chemical properties to atomic and molecular structures. Includes introduction to organic chemistry. Both qualitative and quantitative analysis, with the use of some instrumentation, are included. Applications are made to biological systems and to environmental problems. After having completed this course, students should be able to demonstrate an understanding of ionic equilibrium by solving various problems dealing with pH, hydrolysis, Ksp, buffers, redox titration and acid base titrations. Students should be able to relate chemical and physical properties of common elements and ions to the periodic table and show well-developed lab techniques in experiments involving weighing, filtering and titrating. *Prerequisite: CHM 1505 or departmental consent. (3-4) 5

*CHM 2124-2524 Special Problems: An advanced problem course of independent study in which a student and adviser select an appropriate topic for both laboratory and library research in the field of chemistry. After completing this course, students should be able to conduct a successful library and lab research project in chemistry, and present the results in proper written form. *Prerequisite: CHM 1506 or departmental consent. 1 to 5 class hrs/week—1 to 5 hrs credit.

*CHM 2414 Introductory Organic Chemistry: An introductory organic chemistry course designed for students who may need a review of certain laws, principles and facts from general chemistry that are fundamental to organic chemistry. A brief review of atomic structure, bonding, and acid base theories is included. It is a non-lab survey course for both the science and the non-science student. Chemical and physical properties of various compounds and common functional groups are related to their structure. Nomenclature and practical applications to related fields and to the real world are emphasized. After having completed this course, students should: have a basic knowledge of organic chemistry to be successful in a higher level organic course; be able to apply the learning to other fields of study such as biology; be able to relate the knowledge to the real world. *Prerequisite: CHM 1500 or CHM 1501 or CHM 1504. (4-0) 4

*CHM 2604 Quantitative Chemical Analysis: This course emphasizes a variety of analytical methods. Students successful in this course will be able to make accurate analyses using both volumetric and gravimetric methods. They will also perform well in the use of the calorimeter, potentiometer and infrared spectrophotometer. *Prerequisite: CHM 1506 or departmental consent. (3-6) 6

*CHM 2614 Organic Chemistry I: A systematic study of the theories, principles and techniques of organic chemistry and their application to reactions of aliphatic and aromatic compounds and natural products. Reaction mechanisms are emphasized. Some chemical applications are made to environmental problems and to industrial processes. Laboratory work includes purification, characterization and synthesis of organic compounds with emphasis on the improvement of scientific problem-solving skills. After completing this course, students should be able to: name the common members of the families of organic compounds studied and describe their chemical and physical properties; demonstrate a working knowledge of organic synthesis of the compounds studied based on reaction mechanisms; perform common organic lab experiments in a reasonably safe manner using proper techniques; recognize and/or describe simple chemical tests for certain functional groups. Students with major emphasis in science and engineering should take the organic sequence including: dentistry, optometry, medicine, paramedics, engineering (chemical, petroleum, sanitation, environmental), pharmacy, textiles, chemical technology, chemistry and biology. *Prerequisite: CHM 1506 or departmental consent. (4-4) 6

*CHM 2615 Organic Chemistry II: A continuation of CHM 2614 with a greater emphasis on instrumental analysis in the laboratory. Introduction to biochemistry is included. After completing this course, students should be able to identify some unknown organic compounds using NMR, UV, IR and mass spectra. They should be able to recognize the chemical properties of the common functional groups and should have well developed lab techniques as demonstrated in the identification and synthesis of certain organic compounds. *Prerequisite: CHM 2614 or departmental consent. (4-4) 6

*CHM 2625 Chromatography: A study of the theories, methods and techniques of chromatography including gas, column, ion exchange, paper and thin layer. After completing this course, students should be able to separate, identify and quantify the components of a mixture by the various methods and explain the results with the proper theory. *Prerequisite: CHM 1506 or equivalent. (3-6) 6

Chemistry—Advancement Studies

*CEM 3300 Fire Protection Chemistry: This course is designed specifically to meet the needs of Fire Protection Technology students in preparation for FIP 3404—Chemistry of Flammable Materials and FIP 4434—Chemical and Radiation Hazards. Topics of study include: matter, energy, atomic structure, chemical reactions, equations, solutions, water acids, bases, salts, and organic chemistry. Approximately one-third of the course will introduce organic structures, bonding, naming, classification, functional groups, and halogenated hydrocarbons. Text materials are on a college reading level. *Prerequisites: grade of C or better in high school chemistry, CHM 9500 or EDU 9300. (3-0) 3

CHM 9500 Fundamentals of Chemistry: This course is designed to provide students with a basic foundation in chemistry as preparation for college curriculum courses. Matter, energy, formula writing and equation balancing, ionization, acids and bases, metric system and introductory biochemistry are the units available for study. College Transfer students, Health Program students, Fire Protection Technology and other technical program students will benefit from completing this course. Highly recommended Prerequisite or Corequisite: EDU 9300. (5-5) 5

Civil Engineering Technology

CIV 3201 Introduction to Construction Contracting: This course will present an introduction to the basic principles of construction contracting. Upon course completion, students should be able to: identify the role of the contractor in building construction; be familiar with the licensing laws of North Carolina; have a general understanding of the North Carolina building codes; be introduced to the basic types of building construction; and understand some of the business fundamentals of contracting, such as estimating, bidding, contracts and bonding. (2-0) 2

CIV 3306 Construction Materials and Methods: Upon completion of this course, students should be able to: identify construction materials and their physical properties; discuss the manufacturing processes used to produce common building materials; identify types of construction equipment and their application; explain the methods used to assemble building components; and through site visitation, evaluate the actual application of construction techniques. (2-3) 3

***CIV 3314 Structural Drafting I (CAD) AutoCAD:** Upon completion of this course, students should be able to: identify the components of the AutoCAD system; explain how a CAD system may be implemented to produce structural drawings; draw a foundation plan and schedule; draw various building components using AutoCAD (poured-in-place concrete, precast concrete and structural steel); have a working knowledge of how CAD may be implemented for 'shop' detail drawings. *Prerequisite: ARC 3314 or equivalent. (1-6) 3

***CIV 3315 Structural Derailing (CAD) AutoCAD:** Upon completion of this course, students should be able to: identify the components of the AutoCAD drafting system; explain how a CAD system may be implemented for structural 'shop' detail drawings; explain the modifications which must be made to AutoCAD for structural detailing; using AutoCAD, prepare structural steel 'erection' drawings and 'shop' drawings; using AutoCAD, prepare Reinforced Concrete Placement Drawings. *Prerequisite: ARC 3314 or equivalent, ARC 4339. (1-6) 3

***CIV 3317 Civil Drafting (CAD) AutoCAD:** Upon completion of this course, students should be able to: identify components of AutoCAD Drafting System; explain how a CAD System can be implemented for civil drafting; learn surveying calculations and mapping by computerized systems; and solve earthwork, hydrology, hydraulics and highway design problems by implementing CAD Systems. *Prerequisite: ARC 3314 or equivalent, CIV 4407, CIV 4408. (1-6) 3

***CIV 3504 Surveying I:** Upon completion of this course, students should be able to: measure distances with a surveyor's tape or an electronic distance measuring device; apply geometric principles to correct a taped distance for a standardized measurement; perform the calculations and field operations for a dfferential and profile leveling; use a transit for the measurement of horizontal and vertical angles; calculate bearings and azimuths; and collect data and plot a contour map. *Corequisite: MAT 3507, ARC 3334. (3-6) 5

***CIV 3514 Statics:** Upon completion of this course, students should be able to: apply correct prolem-solving procedures to engineering technology problems; understand the basics of forces and moments; draw free-body diagrams to maintain static equilibrium, calculate external forces and reactions; solve for internal forces in trusses and beams; apply the fundamentals of static friction; soil and hydrostatic pressures to problems; become familiar with the microcomputer's usefulness as a problem-solving tool. *Prerequisite: MAT 3507. (3-6) 5

***CIV 3524 Strength of Materials:** Upon completion of this course, students should be able to: identify types of stresses that develop in structures; compute deformation and strain in bodies due to stress systems acting on the body; construct shear and bending moment diagrams of beams; locate centroids of composite areas; compute the rectangular moment of inertia of an area about various axes; solve for bending and shearing stresses in beams, compute the deflection in beams; calculate stresses due to combined axial and bending loads; apply Euler's equation to columns; analyze and design welded and bolted connections; and use computer programs as an alternate method of problem solving. *Prerequisite: CIV 3514. (3-6) 5

***CIV 4220 Principles of Hydraulics:** Upon completion of this course, students should be able to: identify various properties of fluids; understand and apply the principles of hydrostatic pressures to practical problems; analyze flow characteristics over weirs; analyze flow characteristics in open channels. *Prerequisite: CIV 3514. (1-3) 2

***CIV 4227 Microcomputer Applications Project:** Upon completion of this course, students should have developed the necessary software to enable use of the microcomputer as a problem-solving tool for a significant Architectural or Civil Engineering Technology application. The application must have significant technical depth and potential practical application for the practicing engineering technician. Projects will be selected by each student from relevant areas after consultation with the course instructor. *Prerequisite: EDP 3405, CIV 4427. (1-3) 2

***CIV 4284 Cooperative Work Experience I:** Upon completion of the course, students should be able to: demonstrate a positive attitude toward and knowledgeable understanding of careers in Civil Engineering Technology industry; demonstrate results of applied experience to complement class and lab instruction. *Prerequisite: 45 credit hours earned in residence toward engineering technology degree, and permission of program director. (0-0-20) 2

***CIV 4300 Codes and Contracts:** Upon completion of this course, students should be able to: demonstrate a basic understanding of the N.C. commercial and residential building codes; understand the basic procedures for procuring a building permit and inspection of structures in North Carolina; conduct code reviews for commercial and residential structures; recognize and utilize basic contract terminology and state the basic principles of contractual relationships. *Prerequisite: ARC 4200. (2-3) 3

CIV 4302 Plain Concrete: Upon completion of this course, students should be able to: describe the characteristics of coarse and fine aggregates, and properties of cement and water suitable

for use in Portland Cement Concrete; design a concrete mix based on strength and durability requirements; conduct tests for compressive strength on concrete cylinders and flexural strength of beams; understand the design of formwork for safe placement of concrete; and observe the actual application of concrete construction through site and plant visitation.(1-6) 3

*CIV 4305 **Construction Estimates:** Upon completion of this course, students should be able to: discuss the various bid terms and contract documents as they affect construction; determine the cost of various equipment and methods necessary for construction; complete quantity take-offs of commercial and residential construction; apply pricing to quantity surveys; and use approximate methods for determination of building costs. *Prerequisites: ARC 4200, CIV 3306. (2-3) 3

*CIV 4307 **Construction Project Management:** Upon completion of this course, students should be able to: define the operations comprising a construction project; establish time estimates for each operation; determine the proper sequence of operations and coordination of building trades; discuss principles of scientific management as related to construction; apply manually and using a computer, the critical path method and bar charts on construction planning and scheduling; understand laws and regulations dealing with the construction industry and deal with claims, disputes, change orders and quality control. *Prerequisite: CIV 4305. (2-3) 3

*CIV 4344 **Construction of Roads and Pavements:** Upon completion of this course, students should be able to: perform and interpret the results of the Atterburg Limits, Standard Proctor, and Unconfined Compression Tests; classify soil according to the Unified and AASHTO Classification Systems; discuss the engineering properties of soils and calculate mass-volume relationships; construct a Mass Diagram from a set of cross-section notes and compute average haul and limit or economic haul; compute run-off from drainage area; determine culvert and ditch sizes; determine the thickness of flexible and rigid types of highway surfaces; and design an asphalt mix by the Marshall Method. *Prerequisite: CIV 4302, CIV 3425, CIV 4407. (1-6) 3

*CIV 4407 **Surveying II—Route Surveying:** Upon completion of this course, students should be able to: lay out foundations and give lines and grades for construction of a building; lay out cross-sections of roadways and, from the sections, compute earthwork quantities; calculate and stake out horizontal and vertical roadway curves; apply the methods of lines and grades to a roadway design problem; discuss basic theory of photogrammetry and its application; use the County Register of Deeds Office records to research property records and state the requirements for filing of property maps and deeds; discuss the legal aspects of surveying based on the N.C. Manual of Practice; and balance interior angles of a closed polygon traverse and determine closure conditions. *Prerequisite: CIV 3504.(2-6) 4

CIV 4408 **Surveying III—Boundary Surveying:** Upon completion of this course, students should be able to: collect data for closed traverse using a theodolite and an EDM; balance and plot a closed polygon traverse; tie traverse into the State Plane Coordinate System; locate topography within traverse by stadia and use of plane table; compute areas by coordinate method and double meridian distance method; use rectangular coordinates to inverse bearings and lengths; and determine true meridian by solar or polaris observation. *Prerequisite: CIV 4407. (2-6) 4

*CIV 4424 **Foundation Design and Construction:** Upon completion of this course, students should be able to: list and describe the techniques of subsurface soil exploration; analyze and design continuous wall footings, individual column footings, combined footings pile foundations, and caissons; determine lateral earth pressures to analyze and design retaining walls and excavation bracing; apply the aforementioned principles to a foundation for a commercial structure; and use the microcomputer as an alternate design method. *Prerequisite: CIV 4434. (3-3) 4

CIV 4427 **Steel Design and Construction:** Upon completion of this course, students should be able to: use the latest American Institute of Steel Construction (AISC) Manual; analyze and design steel tension members, beams, columns, and base plates; apply the aforementioned principles to a commercial steel structure; analyze and design bolted and welded connections; understand the various types of connections; and use the microcomputer as an alternate design method. *Prerequisite: CIV 3524.

(3-3) 4

*CIV 4434 **Reinforced Concrete Design and Construction:** Upon completion of this course, students should be able to: understand the Strength Design Method for reinforced concrete as described in the American Concrete Institute (ACI) Building Code; analyze and design by Strength Design reinforced concrete beams (singly reinforced, double reinforced, and T-beams) and columns; apply the aforementioned principles to a commercial concrete structure; understand the principles of prestressed concrete; and use the microcomputer as an alternate design method. *Prerequisite: CIV 3524, CIV 4302. (3-3) 4

*CIV 4_94 **Independent Study:** This course is designed to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment will provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. *Prerequisite: approval of the sponsor and program director. (1-5 credits)

(Also see Architectural Technology for other course descriptions.)

Computers

EDP 1404 Computer Concepts and FORTRAN Programming I: Upon completion of this course, students should be able to: define selected terms pertaining to computer systems and programming; write programs in the FORTRAN language that read and write numeric/alphanumeric, perform arithmetic calculations, use control logic, generate reports with headings and totals, perform operations with one-dimensional arrays; prepare data for testing a FORTRAN program.

(3-2) 4

***EDP 1405 FORTRAN Programming II:** A continuation of EDP 1404. Upon completion of this course, students should be able to write FORTRAN programs for problem solutions requiring: two-dimensional arrays; functions and subroutines; input/output for tape and disk files; logical operations and output. *Prerequisite: EDP 1404, and MAT 1504, MAT 1514 or MAT 3504, or departmental consent. (3-2) 4

EDP 1407 Computer Concepts and PASCAL Programming I: An introductory programming course that emphasizes a disciplined approach to programming in PASCAL. Upon completion of this course, students should be able to: solve problems by developing algorithms; code PASCAL programs involving input, output, simple and compound decisions, real and integer arithmetic, character data, repeated and nested loops; execute and debug PASCAL programs. (3-2) 4

***EDP 1408 Advanced PASCAL:** Upon completion of this

course, students should be able to: understand and use one-dimensional arrays and associated operations; use packed arrays for character strings; declare and manipulate records; search and sort arrays; understand sets and set operations; use PASCAL functions. *Prerequisite: EDP 1407 or departmental consent. (3-2) 4

EDP 1500 Computer Literacy: This course combines lecture, hands-on experience, and videotape material to present computer concepts for computer literacy. Upon completion of this course, students should be able to: identify the basic steps in solving a data processing problem by tracing the flow of data through a computer system; list and define the functional units of a computer; identify the basic processes in programming; list the job characteristics of computer personnel; describe devices and basic procedures in file handling for batch processing systems; identify different programming languages and their usual applications; relate problem definition and project analysis, system design, system development and implementation from the systems analysis point of view; identify the characteristics of on-line systems, such as I/O function, data transmission, file access and response time; identify the concepts of computers as related to multi-programming and multi-processing; identify various computer usages; state some of the impacts of computer technology on individuals and the community; define selected terms relating to hardware and software for mainframe computers and microcomputers; operate a CRT for menu driven applications; and operate a microcomputer with selected software packages. (5-0) 5

EDP 2306 Computer Programming I (Business): Upon completion of this course, students should be able to: construct basic COBOL programs to solve sample business problems; verify the accuracy of program output; construct basic flowcharts; identify business problems which can be solved with a computer. (2-2) 3

***EDP 2307 Computer Programming II (Business):** A continuation of EDP 2306. Upon completion of this course, students should be able to: develop program logic and write COBOL programs for solving sample business programs; incorporate programming techniques and procedures for magnetic tape and disk processing. *Prerequisite: EDP 2306. (2-2) 3

***EDP 3215 Microcomputer Software—LOTUS 1-2-3:** Upon completion of this course, students should be able to: identify the capabilities and applications for use of the LOTUS 1-2-3 software, use the commands and operational procedures to perform functions available in LOTUS 1-2-3, and apply the LOTUS 1-2-3 software to solve lab assignments representative of problems solvable using LOTUS 1-2-3. Hands-on experience is provided in this course. *Prerequisite EDP 3310 or equivalent or departmental consent. (1-2) 2

***EDP 3217 Microcomputer Software—Data Base:** Upon completion of this course, students should be able to define selected terms and concepts used in data base design and application; load a data base software package on a microcomputer system; create and use existing data bases; add, delete and modify data on the data base; organize and arrange data on the data base according to specific processing requirements; and generate reports from the data base. To accomplish the objectives of this course a typical data base software such as dBASE III will be used. *Prerequisite: EDP 3310 or equivalent or departmental consent. (1-2) 2

EDP 3300 Introduction to Computer Concepts: Upon completion of this course, students should be able to: identify the basic steps in solving a data processing problem by tracing the flow of data through a computer system; list and define the functional units of a computer; identify the basic processes in programming; list the job characteristics of computer personnel; describe devices and basic procedures in file handling for batch processing systems; identify different programming languages and their usual applications; relate problem definition and project analysis, system design, system development and implementation from the systems analysis point of view; identify the characteristics of on-line systems, such as I/O function, data transmission, file access and response time; identify the concepts of computers as related to multi-programming and multi-processing; identify various computer usages; state some of the impacts of computer technology on individuals and the community; define selected terms relating to hardware and software for mainframe computers and microcomputers. (3-0) 3

EDP 3310 Microcomputer Operations: This course concentrates on the knowledge and skills needed to operate a microcomputer, not programming or maintenance. Upon completion of this course, students should be able to: operate keyboard (no speed training), floppy disk and line printer; use operational commands; use sample software packages at an elementary level for wordprocessing, spreadsheets, and file management. Microcomputers will be used for practice exercise. (2-2) 3

***EDP 3324 Advanced Microcomputer Operations:** This course teaches the skills needed to use typical software packages on the microcomputer. Upon completion, students should be able to: run software to create and use electronic worksheets; create and use data bases; use the computer as a word processing system. *Prerequisite: EDP 3310 or EDP 1500. (2-2) 3

***EDP 3335 Microcomputer Programming—MS/DOS:** Upon completion of this course, students should be able to define selected terms pertaining to microcomputer systems and programming; list the hardware devices for a typical microcomputer system; use DOS commands; write procedures in MS-DOS that sort, print, copy, use control logic and edit; prepare sample files to test a MS-DOS procedure, create executable batch files; write procedures in an interactive environment. *Prerequisite: EDP 3310 or departmental consent. (2-2) 3

EDP 3405 Microcomputer Programming—BASIC: Upon completion of this course, students should be able to: define selected terms pertaining to microcomputer systems and programming; list the hardware devices for a typical microcomputer system; write programs in the BASIC language that read/write/calculate, use control logic, generate reports with headings and summary totals, perform operations with arrays; prepare sample data to test a BASIC program, define and explain the purpose of a menu; write programs in an interactive environment under control of an editor. (3-2) 4

***EDP 3406 Microcomputer Programming—Advanced BASIC:** Upon completion of this course, students should be able to: write programs to create/access/update data files on disk; use one- and two-dimensional array processing; use selected functions available in BASIC and write user defined functions and subroutines; use string functions; write programs for reports using designated print formats with headers, edited output and summary totals for screen and printer output. *Prerequisite: EDP 3405. (3-2) 4

***EDP 3407 Programming Business Applications for Mi-**

crocomputers: Upon completion of this course, students should be able to: prepare input, output and file formats; design and write programs in BASIC for selected accounting/business applications; code and/or explain techniques or routines used in computerizing a business application such as data editing, sorting, merging, multileveled control breaks, calculation of days between dates, and file processing; prepare and interpret documentation for selected accounting/business applications. *Prerequisite: EDP 3405 and EDP 3406. (3-2) 4

*EDP 3410 **C Language**: Upon completion of this course, the student should be able to: define selected terms pertaining to microcomputer systems and programming; write programs in C language that read/write/calculate, use structured logic, use library functions for specific tasks, generagte reports, perform operations with arrays; create, edit, store, link and execute programs and program modules in C language; write user defined functions; prepare sample data to test a C program; prepare programs for execution using a C compiler. *Prerequisite: EDP 3405 or equivalent or departmental consent. (3-2) 4

*EDP 3440 **Assembly Language:** Upon completion of this course, students should be able to: perform arithmetic operations in the hexadecimal and binary numbering systems; code selected assembly language statements; interrupt machine language instructions and read hexadecimal dumps; write assembly language programs using techniques ranging from reading of records through address modification, loops, editing, and sorting of 1-level tables; use macro instructions and subprograms. *Prerequisite: EDP 3515 or departmental consent. (3-2) 4

EDP 3514 **Programming Logic and COBOL I**: Upon completion of this course, students should be able to: analyze given problem definitions and develop solutions from a programming viewpoint at a fundamental level with the use of hierarchy charts and I/O specifications; write and execute structured COBOL programs for business problems involving data input, basic calculations, code checking, decision making, iterations, reports, headings, and summary totals; prepare test data and verify results of executing a COBOL program; correct syntax and logical errors in a COBOL program. (3-4) 5

*EDP 3515 **Programming Logic and COBOL II**: Upon completion of this course, students should be able to: outline the logic through use of hierarchy charts, I/O specifications, and flowcharts to process multiple level control breaks, group indicated and group printed reports, advanced arithmetic calculations, advanced decision making techniques, disk/tape I/O, create/update sequential files on tape/disk, iterative processing, one-dimensional tables; write structured COBOL programs that will handle these same features; code, test and debug sample problems with these features; correct syntax and logic errors with the help of standard manuals. *Prerequisite: EDP 3514. (3-4) 5

*EDP 3516 **Programming Logic and COBOL III**: Upon completion of this course, students should be able to: outline the logic through use of hierarchy charts, I/O specifications, and flowcharts to handle multi-dimensional tables, sorting of data, merging files, files containing multiple record formats, files containing variable length records, non-sequential files (create/update), reports using the REPORT WRITER feature, subprograms, maintenance and modification of existing programs; write structured COBOL programs that will handle these same problems; correct syntax and logic errors with the help of standard manuals. *Prerequisite: EDP 3515. (3-4) 5

*EDP 4305 **Computer Operations for Programmers**: Upon completion of this course, students should be able to correctly manipulate the S/370 hardware; correct JCL at machine level; do error analysis and perform recovery routines resulting from program and JCL problems; use VSE operator commands to perform various routines such as controlling job throughput, listing VTOC's, running utility programs, and displaying system status. *Prerequisite: EDP 3516 and EDP 4435 or departmental consent. (2-2) 3

*EDP 4314 **Systems and Procedures**: Upon completion of this course, students should be able to summarize the state of the art in information systems design; prepare a business form; prepare and explain a project plan and feasibility report; prepare a data flow diagram for a system; prepare a record layout for an input and output file; relate the system process to a typical application by the analysis and execusion of a case problem using the textbook and a microcomputer. *Prerequisite: ACC 1604 or BUS 1400; and EDP 3300 or EDP 1500; or departmental consent. (3-0) 3

*EDP 4390 **Individual Study**: This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment will provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. *Prerequisite: Approval of the sponsor and department head. (3-0) 3

*EDP 4425 **Computer Systems I**: This course uses one of the systems available for CPCC students—MVS/JES, an OS type system. Upon completion of this course, students should be able to: use utility manuals to code the JCL and control statements for certain utilities; code DD statements for sequential files; code JCL for compilation and execution of COBOL and WATBOL programs; create PDS, store and execute load modules; list physical and storage characteristics of disk and tape; calculate storage requirements for a file on disk or tape; trace the job flow from input to output identifying software programs involved for a multiprogramming computer system for compilation and execution of programs; diagram the program and data flow in a multiprogramming computer including channels and interrupts; define an operating system and discuss IPL, SYSGEN and other selected terms; code parameters of a Job and Execute card; use catalogued files. *Prerequisite: EDP 3514 or departmental consent. (3-2) 4

*EDP 4435 **Computer Systems II:** This course uses both the operating systems available to CPCC students—MVS/JES, an OS type operating system, and DOS/VSE, a DOS type operating system. Upon completion of this course, students should be able to: store, modify and use source modules on PDS in COBOL and WATBOL; code DD statements for index sequential, VSAM, random files and define processing procedures and modes; create and store procedures in a procedure library; establish and use generation group files; use utility manuals for execution of selected utilities; state purpose of and list some typical access method programs; use message code listings to determine errors occurring in running sample labs; code the control language for a DOS operating system. *Prerequisite: EDP 4425 or departmental consent. (3-2) 4

EDP 4444 **RPG Programming**: Upon completion of this course, students should be able to: define various fields on the RPG specification forms; explain general logic of the execution cycle; code, debug and execute RPG programs using indicators, multiple files, matching records, total levels, report headings, group indication, array processing, and exception output instructions; correct compiling and logic errors. (3-2) 4

*EDP 4445 **Advanced RPG Programming:** Upon completion of this course, students should be able to code, debug, and execute RPG programs using table processing, array and table look-ups, matching record technique, read demand files, ISAM and VSAM file organizations, packed decimal numeric representation, subroutines and structured programming techniques. *Prerequisite: EDP 4444 or departmental consent. (3-2) 4

*EDP 4515 **Applied Business Systems and Data Bases:** Upon completion of this course, students should be able to: estimate hardware, software and personnel requirements for a specific business application; relate the various business statements (e.g., balance sheet, income, cost of goods sold) to the business data base; analyze business problems, suggesting computer related solutions and preparing a feasibility study (factors to include: systems analysis, programming and personnel requirements); relate the data base of a business to the three principal areas of Computer Information Systems (CIS): Data Processing (DP), Management Information Systems (MIS), and Decision Support Systems; define the three principal data base structures (Hierarchical, Network, and Relational) and discuss their evolution; define the common database terminology; compare and contrast common data bases and data base languages; utilize one or more common data bases on a microcomputer system; relate the Computer Information Systems approach and data bases to the data communication environment; define the two main network structures (star and ring); define telecommunication terminology necessary to understand data communication concepts. *Prerequisite: EDP 4314 or departmental consent, ACC 1605 or departmental consent. (3-4) 5

*EDP 4516 **CICS:** Upon completion of this course, students should be able to: state the differences between Online and Batch programs; list the common characteristics of online applications; describe the qualities needed by a good telecommunications monitor; describe the data flow within the Customer Information Control System/ Virtual Storage (CICS/VS) telecommunication monitor; define important tables and storage areas utilized by CICS/VS; code, compile and catalog physical and symbolic map descriptions (Screen formats) using the Basic Mapping Support (BMS) facility of CICS/VS; code and execute Command Level COBOL programs for file record inquiry, file record creation, file record update, file record deletion, file browsing, link and transfer of control between independent programs; define the CICS/VS statements necessary to use temporary storage. *Prerequisite: EDP 3516. (3-4) 5

*EDP 4517 **Batch Data Processing Applications:** Upon completion of this course, students should be able to: identify in general the approach steps in design and programming of a batch business data processing application and use these steps in the design of a specific application; write programs to create and process files on tape and/or disk as required by the selected business application; write programs to include and/or state various programming requirements and techniques used in batch business application programming such as the logic for matching, merging, data editing, multi-level control breaks, table processing, and various report formats; and code the required JCL for programs and utilities as needed in implementing the application. *Prerequisite: EDP 3516, EDP 4425 and EDP 4314. (3-4) 5

*EDP 4518 **Real Time Data Processing Application:** Upon completion of this course, students should be able to: identify in general the approach steps in design and programming of a real time business data processing application and use these steps in the design of a specific application; work on a programming team in programming a complete application; make decisions regarding files, number and scope of programs, and others regarding a particular computerized application; write programs to implement a particular application with VSAM file processing; code the required JCL for programs and utilities as needed in implementing the application. *Prerequisite: EDP 3516, EDP 4435 and EDP 4515. (3-4) 5

EDP 5201 CRT Use in Business Applications: The CRT (cathode ray tube) is becoming more prominent as the computer becomes accessible to all areas of business. The CRT Use in Business Applications course is designed to familiarize students with the general use of the CRT. Upon completion of this course, students should be able to: describe the properties of CRT use; define the general use of functional keys; obtain particular display screens upon request; use the CRT effectively for feeding and obtaining information to and from the computer. (2-0) 2

*EDP 5390 **Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment will provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. *Prerequisite: Approval of the sponsor and department head. (3-0) 3

*EDP 5424 **Programming I—Operators:** Upon completion of this course, students should be able to: write COBOL programs that will generate business reports with headings and simple arithmetic operations performed on input data; analyze listings of COBOL programs to determine such things as: file, record and field names, input/output record layouts, input/output devices; list the steps and describe JCL involved in compilation and execution of a COBOL program as handled under an operating system. *Prerequisite: EDP 1500 and FIN 3314. (3-2) 4

*EDP 5425 **Programming II—Operators:** Upon completion of this course, students should be able to: explain the general purpose of the RPG Specification forms; code, debug, execute RPG programs to perform basic calculations and generate reports involving control breaks, headings and form control. *Prerequisite: EDP 1500 and FIN 3314. (3-2) 4

*EDP 5524 **General Data Processing Applications:** Upon completion of this course, students should be able to: code the DOS and power JCL necessary to execute programs stored in a library and code the JCL for files to be used by the program; draw system operational flow charts; read a selected operator run sheet to determine devices, files backup and rerun procedures, type forms, form distribution, transaction/master file storage, and special control records for the jobs; prepare master file and transaction file records for a selected business data processing applications; prepare a run schedule, run the programs and verify the results for a selected business data processing application; use return codes in controlling job step execution; define selected terms associated with business data processing applications. *Prerequisite: EDP 5614, EDP 5424 and ACC 3600. (4-2) 5

EDP 5601 Data Entry I-A: This is the first course in a three-course evening sequence (EDP 5601, EDP 5602, and EDP 5603) equivalent to the two-course day sequence (EDP 5901 and EDP 5902). This course is the same as the first two-thirds of EDP 5901. Upon completion of this course, students should be able to: identify records; describe the process of record format-

ting; utilize various source documents; punch program cards for the keypunch machines; define selected terms related to data entry; be able to use a CRT at an elementary level; obtain an acceptable level of accurate keystrokes per hour. (3-9) 6

*EDP 5602 **Data Entry I-B and II-A:** This is the second course in a three-course evening sequence (EDP 5601, EDP 5602, and EDP 5603) equivalent to the two-course day sequence (EDP 5901 and EDP 5902). This course is the same as the last one-third of EDP 5901 and the first one-third of EDP 5902. Upon completion of this course, students should be able to: recognize data errors and correct them; perform operational procedures for transferring data from one medium to another; operate a CRT at an intermediate level; obtain an acceptable level of accurate keystrokes per hour. *Prerequisite: EDP 5601 or consent of instructor. (2-12) 6

*EDP 5603 **Data Entry II-B:** This course is the third course in a three-course evening sequence (EDP 5601, EDP 5602, and EDP 5603) equivalent to the two-course day sequence (EDP 5901 and EDP 5902). This course is the same as the last two-thirds of EDP 5902. Upon completion of this course, students should be able to: operate a CRT at an advanced level; define the principles of the batch/edit routine; define the principles of program development of data entry applications; obtain an acceptable level of accurate keystrokes per hour. *Prerequisite: EDP 5602 or consent of instructor. (3-9) 6

*EDP 5613 **Computer Operations I:** Upon completion of this course, students should be able to: list and perform the computer operator's duties in the operation of a card reader/punch, magnetic tape, magnetic disk, and console control devices; describe the hardware components of a business computer system; convert binary, hexadecimal, and decimal from one base to the other; interpret and use standard operator run instructions; run selected utility programs. Students will receive "hands on" experience on a complete computer system. *Corequisite: EDP 1500. (5-2) 6

*EDP 5614 **Computer Operations II:** Upon completion of this course, students should be able to: identify the librarian used in DOS/VSE; understand how DOS/VSE implements the use of virtual storage; execute the procedures to IMPL and IPL; list and use operator commands for communicating with the DOS/VSE system; use the proper procedures for responding to error-related messages to system operation; identify the purpose and function of VSE/POWER; interpret job status information; use POWER operator commands. Students will receive "hands on" experience on a complete computer system. *Prerequisite: EDP 5613. (5-2) 6

*EDP 5615 **Computer Operations III:** Upon completion of this course, students should be able to: trace the job flow in a multitasking computer environment; list the purpose and types of JCL statements for OS; use manuals to code JCL and execute selected utility programs available on computer system used at CPCC; define the various features of an operating system; define OS operator commands and interpret OS operator messages. *Prerequisite: EDP 5614. (5-2) 6

*EDP 5616 **Computer Operations IV:** Upon completion of this course students should be able to: format the data and job control language to process a selected data processing application; create and use run instructions necessary to process a selected data processing application; operate a system with a DOS/VSE operating system; define means and methods of computer room and data security; utilize necessary manuals to solve error and recovery procedures; present a written description of a menu system. Students will gain considerable "hands on" experience using a complete computer system in lab. *Prerequisite: EDP 5614; Corequisite EDP 5524. (4-4) 6

EDP 5901 **Data Entry I:** Upon completion of this course, students should be able to: identify records; describe the process of record formatting; recognize data errors and correct them; utilize various source documents; punch program cards for keypunch machines; define selected terms related to data entry; be able to use a CRT at elementary level; obtain an acceptable level of accurate keystrokes per hour. (4-15) 9

*EDP 5902 **Data Entry II:** Upon completion of this course, students should be able to: operate a CRT at an advanced level; define the principles of program development of data entry applications; perform operational procedures for transferring data from one medium to another; define the principles of the batch/edit routine; obtain an acceptable level of accurate keystrokes per hour. *Prerequisite: EDP 5901 or consent of instructor. (4-15) 9

Computer/Electrical/ Electronics Engineering Technology

ELN 3100 **Electrical/Electronics Seminar:** Upon successful completion of this course, students will: have received an orientation to the College, the electrical/electronics programs including the services and personnel available; have explored available electrical/electronic course specialization and associated career path opportunities; have explored the continuing education possibilities, including the bachelor of engineering technology (BET) programs; have explored the benefits of membership in professional organizations, including the student section of IEEE; have heard speakers from industry discuss their individual needs and what they look for when selecting graduates for employment. (1-0) 1

ELN 3104 **Computer Technology Seminar:** Upon successful completion of this course, students will: have received an orientation to the College, the computer engineering technology program, including the services and personnel available; have explored available computer engineering technology course specializations and associated career path opportunities; have explored the continuing education possibilities, including the bachelor of engineering technology (BET) programs; have explored the benefits of membership in professional organizations, including the student section of IEEE; have heard speakers from industry discuss their individual needs and what they look for when selecting graduates for employment. (1-0) 1

ELN 3105 **Introduction to Computer Engineering Technology:** Upon successful completion of this course, students will: become familiar with computer systems in computer engineering technology laboratory and procedures, capabilities, and utilization of these systems; become familiar with computer terminology; be introduced to various aspects of problem analysis such as process of research, data gathering and implementation, alternative solutions, and decision phases related to computer engineering technology; become acquainted with the history of computing. (1-0) 1

*ELN 3404 **Electronics I—Active Devices:** Upon completion of this course, students should be able to: demonstrate a working knowledge of semiconductor diodes and their applica-

tion in basic rectifier circuits; perform graphical analysis of the bipolar and JFET transistor amp; design proper DC bias for class A bipolar transistor amplifier; analyze the performance of small signal transistor amplifier circuits using simplified approximate hybrid parameters. *Prerequisite: ELN 3515. (3-3) 4

*ELN 3405 **Electronics II—Analog Circuits:** Upon completion of this course, students should be able to: recognize, reproduce, specify component characteristics for, assemble, and test the following electronic circuits: rectifiers, passive filters, controlled power switching circuits, push-pull and other large signal amplifiers, oscillators, and power supply regulators; and design proper DC bias for JFET and MOSFET amplifiers. *Prerequisite: ELN 3404. (3-3) 4

*ELN 3406 **Electronics III—Op-Amps:** Upon completion of this course, students should be able to utilize operational amplifier specification data for the purpose of: selecting and/or determining necessary discrete components and power required for common integrated circuit operational amplifiers applications; designing circuit applications for oscillators, comparators, inverting and noninverting amplifiers, voltage regulators, zero cross detectors, and waveform generators; experimentally demonstrate circuit design and device specifications in laboratory. *Prerequisite: ELN 3405. (3-3) 4

*ELN 3407 **Electrical/Electronic Devices & Controls:** Upon completion of this course, students should be able to: demonstrate an understanding of AC and DC electronic circuits; evaluate the performance of motors, transformers and controllers; and construct and diagnose the supporting instrumentation and circuit elements of these devices. (This course is intended for students not enrolled in Computer, Electrical or Electronics Engineering Technology programs.) *Prerequisite: PHY 1406. (3-3) 4

*ELN 3414 **Industrial Instrumentation:** Upon successful completion of this course, students should be able to: specify an appropriate input transducer for interface in an electronic control system for measurement of temperature, pressure, light, et al; specify appropriate output control element requirements and/or device for recording, display, and process control; integrate input and output transducers with electronic signal conditioners (e.g., op-amps) and control systems; interface digital and analog devices with industrial control equipment. *Prerequisite: ELN 3406. (3-3) 4

*ELN 3514 **Basic Electricity (DC):** Upon completion of this course, students should be able to: calculate voltage, current, resistance, power and energy of series, parallel and combinational series-parallel resistive circuits with DC power supplies; calculate equivalent resistance; measure these circuit parameters and verify the results of calculations; properly use laboratory test equipment to measure circuit parameters; interpret passive circuit diagrams and symbols; interconnect components shown on standard circuit diagrams to produce functioning circuits; calculate voltage, current, charge and energy of series, parallel and combinational series-parallel resistive-capacitive-inductive steady state circuits with DC power supplies; calculate equivalent capacitance and inductance; predict the instantaneous values of voltage and current in R-C and R-L circuits given a switch transition in the circuits; calculate instantaneous values of voltage, current, charge and energy in series R-C and series R-L circuits; and calculate the time constants and settling time for R-C and R-L circuits. *Corequisite: MAT 3507. (3-6) 5

*ELN 3515 **Basic Electricity (AC):** Upon completion of this course, students should be able to: select values of R, C and L required to produce any desired voltage, current and impedance in AC circuits; analyze R-L-C series parallel and combination circuits and draw phasor diagrams representing voltage and current, impedance diagrams representing resistance and reactance; calculate L-C values required in resonant circuits; analyze resonant circuits; correct power factor when required and calculate true power, apparent power and reactive power in AC circuits; and select proper transformers in low frequency circuits for impedance matching, voltage step-up or step-down and test for proper operation in these circuits. *Prerequisite: ELN 3514, MAT 3507. (3-6) 5

*ELN 4100 **Senior Seminar:** Upon successful completion of this course, students should be able to: identify and define the various career roles available to the Computer and Electrical/Electronics Engineering Technician; write an acceptable resume; demonstrate satisfactory skills required in the job hunting process. *Prerequisite: ELN 3405. (1-0) 1

*ELN 4284 **Cooperatve Work Experience:** Upon completion of this course, students should be able to: demonstrate a positive attitude toward and knowledge of careers in the Computer/Electrical/Electronics Engineering Technology industry; gain applied experience to complement classes and lab instruction. *Prerequisite: 45 credit hours earned in residence toward engineering technology degree, and permission of program director. (0-0-20) 2

*ELN 4326 **Electrical-Electronics Project:** Upon completion of this course, the student should be able to: lay out and produce a printed circuit board; install components; test the circuit; and evaluate performance and provide a detailed technical report on the project. *Prerequisite: ELN 3406, DFT 3400, COM 3306. (1-6) 3

*ELN 4327 **Microcomputer Applications Project:** The student will develop necessary software to enable use of the microcomputer as a problem-solving tool for a significant Electrical or Electronics Engineering Technology application. The software developed must have practical application for the practicing engineering technician. The student will select a project from a relevant area after consultation with the course instructor. The student will provide a detailed technical report on the project. *Prerequisite: EDP 3405, ELN 4547, COM 3306. (1-6) 3

*ELN 4345 **Advanced E/E Topics:** The student will solve a wide variety of problems illustrating advanced applications of Electrical/Electronics principles. Topics may include: microprocessor applications and design, power electronics and control, programmable logic controllers (PLC), medical electronics and advanced communications. Specific topic(s) may vary from quarter to quarter. *Prerequisite: ELN 3406 and consent of program director. (1-6) 3

*ELN 4401 **Planning Electrical Installations:** Upon completion of this course, students should be able to: have an understanding and appreciation for the value of the Underwriters Laboratories and the National Electrical Code; use the N.E.C. to determine safe standards for planning electrical installation; plan and calculate lighting and power systems for commercial and industrial installations; estimate and specify commercial and industrial lighting and power systems. *Prerequisite: ELN 3515. (3-3) 4

*ELN 4404 **Medical Electronics:** Upon completion of this course, the student should be able to: predict equipment response when given appropriate bioelectric equivalent signal; verify proper connection of patient/transducer interface to medical equipment; measure with conventional test device the

leakage currents associated with the safety of medical equipment; diagram the human cardiovascular circulation system; and select the appropriate electrode or transducer as required to obtain a given biomedical parameter. *Prerequisite: ELN 3406. (3-3) 4

*ELN 4414 **Receivers and Transmitters:** Upon completion of this course, students should be able to: calculate and measure the resonant frequency of various L-C circuit combinations; calculate and measure bandwidth of resonant L-C circuits; draw block diagrams and trace signal of typical AM and FM receivers and transmitters; perform alignment of receiver and transmitter coupling circuits for acceptable performance by using appropriate test and measuring equipment and techniques; perform technical analysis of AM and FM receiver and transmitter circuits as follows: frequency multipliers, small signal and large signal voltage and power amplifiers, oscillators, and AM and FM detectors. *Prerequisite: ELN 3406. (3-3) 4

*ELN 4415 **Industrial Programmable Controllers:** A presentation of the basic principles and practical applications of Programmable Logic Controllers (PLC's). Upon successful completion of this course, students should be able to: convert relay ladder diagrams to PLC programs; design PLC programs for practical industrial applications; utilize peripheral devices such as recorders, input/output modules, CRT, and printers; execute programs in the laboratory controlling the simulated operation of typical industrial control systems. *Prerequisite: ELN 4427 or ELN 4417. (3-3) 4

*ELN 4416 **Computer Maintenance I:** Upon successful completion of this course, students should be able to: identify and define the various components of a small computer system; show efficiency and proper application of electronic test equipment such as oscilloscope and logic probes in computer systems; demonstrate an understanding of the theory of operation concerning how a microprocessor controls data movement to RAM, ROM, CRT terminal, floppy disk controller and a printer; localize and correct defective components (at the system, board and component levels) in the computer peripheral interface circuitry to terminals and printers; perform preventive maintenance and alignment procedures as specified. *Prequisite: ELN 4547. (2-6) 4

*ELN 4417 **Computer Circuits I:** Upon completion of this course, students should be able to: specify the improvements and advantages that digital circuitry provides in electronic equipment and devices; use binary numbers and codes to perform binary arithmetic; read logic diagrams and use manufacturer's specifications to determine operating characteristics and functions of digital circuits; draw a digital schematic circuit using proper drafting techniques; reduce digital expressions by using laws and theorems of Boolean algebra and Karnaugh maps; implement circuitry using AND, NAND, NOR and inverter gates; utilize R-S and J-K flip-flops as memory devices; use the J-K flip-flop as building block for the design of counters, storage, and shift registers; and construct and verify the operation of various digital circuits in a laboratory setting. *Prerequisite: ELN 3404 (3-3) 4

*ELN 4418 **Computer Circuits II:** Upon completion of this course, students should be able to: utilize decoder circuitry to drive LED's for displaying readouts; use both astable and monostable multivibrators for timing and control of digital circuits; implement addressing and movement of data in RAM and ROM; draw a microprocessor in block diagram form; design and analyze specific computer hardware units such as control unit and arithmetic logic units; design and draw the above circuitry and assemble it using conventional breadboarding and wirewrapping techniques in a laboratory setting. *Prerequisite: ELN 4417. (3-3) 4

*ELN 4427 **Digital Circuits I:** Upon completion of this course, students should be able to: specify the improvements and advantages digital circuitry provides in electronic equipment and devices; use binary numbers and codes to perform binary arithmetic; read logic diagrams and use manufacturer's specifications to determine operating characteristics and functions of digital circuits; draw a digital schematic circuit using proper drafting techniques; reduce digital expressions by using laws and theorems of Boolean algebra and Karnaugh maps; implement circuitry using AND, OR, NAND, NOR and inverter gates; construct and verify the operation of various digital circuits in a laboratory setting. *Prerequisite: ELN 3404. (3-3) 4

*ELN 4434 **Digital Circuits II:** Upon completion of this course, students should be able to: utilize the J-K flip-flop as the building block for the design of counters, storage and shift registers; utilize decoder circuitry to drive LED's for displaying readouts; use both astable and monostable multivibrators for timing and control of digital circuits; design digital to analog and analog to digital converters to interface electronic circuitry; implement addressing and movement of data in RAM and ROM; design and draw the above circuitry and assemble it using conventional breadboarding and wirewrap techniques in a laboratory setting. *Prerequisite: ELN 4427. (3-3) 3

*ELN 4436 **System Correction Procedures:** Upon completion of this course, students should be able to: diagnose defective Electrical/Electronics circuits and systems given appropriate diagrams and operational specifications; locate defective components with the effective application of a VOM, EVM, A-C ammeter, wattmeter, oscilloscope, audio generator, R.F. generator or frequency meter; select appropriate replacement component as required to restore circuit or system to acceptable performance; and perform alignment and/or adjustments as required by equipment performance specifications. *Prerequisite: ELN 3406. (3-3) 4

*ELN 4437 **Microcomputer Applications in Robotics:** Upon completion of this course, students should be able to: understand robot terminology; classify robots and robotic systems by geometry, power source, application, path control, and intelligence; identify safety precautions necessary in a robotics/automation environment; identify basic end of arm tooling considerations; demonstrate an understanding of the advantages and operation of both open loop and closed loop control systems; design software for teaching and operation of a robot for performance of a specified task; demonstrate an understanding of sensor and system interface requirements between the robot and support hardware; identify, troubleshoot, and correct basic hardware/software problems; design a robot software/hardware project using a computer for control; demonstrate an understanding of basic controller operation; effectively use wiring diagrams and maintenance manuals in isolating and debugging system problems. *Prerequisite: ELN 4547, EDP 3405. (3-3) 4

*ELN 4444 **Network Analysis:** Upon completion of this course, students should be able to: determine series and parallel equivalent circuits using Kirchoff's law; simplify DC and AC circuits to Thevenin's and Norton's equivalent; calculate electrical properties of DC and AC network circuits using superposi-

tion, mesh and nodal analysis; transform delta equivalent circuits to wye and wye to delta; and experimentally prove the above in the laboratory. *Prerequisite: ELN 3515, MAT 3508. (3-3) 4

*ELN 4454 **Data & Computer Communications I:** Upon completion of this course, students should be able to: demonstrate efficiency in asynchronous, bisynchronous and synchronous transmission techniques; parallel and serial transmission; general characteristics of UART and USART interfaces; identify methods of generating 20 milliamp current; optical couplers; line drivers and repeaters; 2-wire and 4-wire conditioning, calculation of DB levels; demonstrate an understanding of RS232 standards, EIA, CCITT, RS422, and RS423; clock distortion, bias, attenuation, echo suppression; frequency spectrum and error detection techniques; exhibit proficiency in time and frequency multiplexing; packet, block message and bit switching; identify modem types and define simplex, half duplex, full duplex, half duplex supervisory and half duplex reverse channel; demonstrate the differences in parity checking, cyclic redundancy, longitudinal redundancy, barber pole, and block check character; and explain remote job entry, high level data link control (HDLC); synchronous data link control (SDLC); perform calculations of speed versus distance performance curves. *Prerequisite: EDP 3405, ELN 4434 or ELN 4418, ELN 4547. (3-3) 4

*ELN 4455 **Data & Computer Communications II:** Upon completion of this course, students should be able to: explain the concepts of channel sharing networks; explain the differences between narrow, voice grade and wide band speed categories; show the uses and operation of point-to-point, multipoint, and multilink systems; list the differences in and advantages of message and packet switching; identify and define the theory and operation of local area networks; demonstrate the differences in line control of asynchronous and synchronous lines; use batch, terminal clusters, and point-of-sale terminals; use and write basic software functions to initiate and control, assemble, and edit messages, code conversion, scan or poll on a line, priority schedule and line queues. *Prerequisite: ELN 4434, ELN 4547, ELN 4454. (3-3) 4

*ELN 4464 **Printed Circuit Board Design and Layout (CAD) I:** Upon completion of this course, students should be able to: demonstrate an understanding of the graphic language of CAD; identify the components of a CAD system; have a working knowledge of basic commands; draw elements of drawings such as lines, circles, arcs, curves, etc.; draw basic electrical/electronic circuits, including: schematic diagrams, wiring diagrams, component layout for printed circuits, and printed circuit layout; use a plotter to prepare an acetate layout ready for exposure. *Prerequisite: DFT 3400, ELN 3405, ELN 4417 or ELN 4427. (2-6) 4

*ELN 4465 **Printed Circuit Board Design and Layout (CAD) II:** This course is a continuation of ELN 4464. Upon completion of this course, students should be able to: identify existing library symbols and create new figures as needed; create schematic diagrams using stored symbols and connecting them together assigning all pin numbers, reference designators, values, and part numbers; create printed circuit board outline and place components on the board; merge the information from the schematic and printed circuit board files so that all connecting nodes are correctly identified; use the automatic routing feature to make the required connections among components to complete the design and layout of a complex electronic circuit. *Prerequisite: ELN 4464. (2-6) 4

*ELN 4505 **Power Electronics:** Upon successful completion of this course, students should be able to: perform basic circuit design, select components, breadboard in the lab, and evaluate operational performance of the following industrial electronic circuits: (1) industrial rectifiers; (2) thyristor phase shift control; (3) electronic DC motor control; (4) switching transistor power control; (5) variable frequency AC motor control. *Prerequisite: ELN 4525, ELN 3406. (3-6) 5

*ELN 4525 **Electrical Machines I:** Upon successful completion of this course, students should be able to: specify the factors required to induce a voltage and develop force in simple generators and motors; show visually the physical relation and polarities of the above factors; calculate induced voltage in generators; calculate developed force and torque in motors; calculate the electrical quantities of current, voltage, power, power factor, phase angle, voltage regulation, efficiency and the physical quantities of torque, speed and horsepower for: (a) DC generators; (b) DC motors; (c) transformers; (d) alternators; (e) three-phase motors; (f) single-phase motors; and select and wire motors, generators, transformers, meters, and loads in the laboratory as required to obtain operational data and evaluate performance of the above. *Prerequisite: ELN 3515; Corequisite: PHY 1404 (3-6) 5

*ELN 4526 **Electrical Machines II:** Upon successful completion of this course, students should be able to: analyze and evaluate the electrical and mechanical characteristics of (a) synchronous motors; (b) alternators in parallel; (c) three-phase transformers; (d) autotransformers; perform motor generator and transformer efficiency evaluations, and compute efficiencies at various operating loads; determine, select and evaluate overload and short circuit protective devices for optimum motor protection; design and evaluate performance of various AC and DC motor control circuits; conduct laboratory experimentation as required to obtain operational data and evaluate performance of the above devices and circuits. *Prerequisite: ELN 4525. (3-6) 5

*ELN 4547 **Microprocessors I:** Upon successful completion of this course, students should be able to: utilize a microprocessor-based system for digital control and monitoring; interpret specifications and characteristics of the integrated circuitry associated with a microprocessor, including RAM, ROM, PROM; demonstrate the application of peripheral devices which interface with a microprocessor; interpret machine instructions and trace their execution through a typical system; write programs using both machine and assembly language; execute and debug programs using individual microcomputer systems. *Prerequisite: ELN 4427 or ELN 4417, EDP 3405. (3-6) 5

*ELN 4557 **Microprocessors II:** Upon successful completion of this course, students should be able to: design a monitor program for a microprocessor-based system; write the necessary software with the aid of an assembler and editor; design appropriate I/O interfacing; debug, test, and document the microcomputer system. *Prerequisite: ELN 4547. (3-6) 5

*ELN 4567 **Microcomputer System Design:** Upon successful completion of this course, students should be able to: design a microprocessor-based system with an interface module to control an industrial process; write software with the aid of editor/assembler to control the system; fully document the system with electrical schematics and source listing; construct a working board with an EPROM monitor to control the system. *Prerequisite: ELN 4547. (3-6) 5

Correctional Services

CSC 3300 Corrections—Policies and Procedures: Upon completion of this course, students should be able to: draw and label an organizational diagram of the North Carolina Division of Prisons; list inmate conduct rules and describe disciplinary procedures; describe the classification process of inmates; describe the system for inmates' communication with the public, to include visitation, mail, etc.; identify treatment programs offered by the N.C. Division of Prisons; describe custody and security procedures; describe medical procedures for inmates; outline standard procedures in case of a major emergency; list and describe the duties and general orders for correctional officers; list and describe the Inmate Grievance Procedure. (3-0-0) 3

CSC 3301 Drugs, Society, and Crime: Upon completion of this course, students should be able to: identify the significant historical events in the United States that have caused an increase in drug use and abuse; define the chemical composition of drugs used by society; identify the various drug classifications, list examples of each, and describe their uses; define psychoactive and non-psychoactive drugs and identify their differences; identify and describe the North Carolina Controlled Substances Act and the Drug Paraphernalia Act; describe various ways drug use affects our society and increases the incidence of crime; identify the drugs most commonly sold illegally. (3-0-0) 3

CSC 3302 Court Intake Officer: Upon completion of this course, students should be able to: prepare a pre-sentence investigation report; prepare a technical report including a summary, and using short definitive statements; understand and show by demonstration the proper courtroom decorum and etiquette; develop relationships with other court personnel; prepare a narrative report and make a presentation orally to a group. (3-0-0) 3

CSC 3303 Supervision for Probation and Parole: Upon completion of this course, students should be able to: conduct interviews with clients, families, and other interested persons; learn to assist clients by knowing the various referral agencies and resources available; prepare an assessment report detailing the needs of the client and the community; use the approved methods of supervision and surveillance of clients; use Transactional Analysis, Reality Therapy, and Behavior Modification techniques in assisting clients; intervene effectively in a crisis situation; understand the problems in dealing with substance abuse counseling. (3-0-0) 3

CSC 3500 Introduction to Corrections: Upon completion of this course, students should be able to: demonstrate a broad overview of corrections, probation and parole; discuss correctional concepts; understand the rights of convicted criminals; understand correctional administrative functions; discuss various job positions and classifications common to State and Federal Agencies and institutions devoted to corrections. (5-0-0) 5

CSC 3501 Correctional Psychology: Upon completion of this course, students should be able to: identify the most common psychological demands and effects of the corrections function upon personnel: corrections officer, treatment staff, probation and parole officer, court officer and related fields charged with supervision and treatment of persons held in confinement; demonstrate an understanding of programs used to classify and treat inmates; identify the causes of controlling people in confinement, its psychological impact on the custody staff and subordinates; identify the types of inmates and their behavioral characteristics; know the remedial services that are available. (5-0-0) 5

CSC 3504 Juvenile Justice System: Upon completion of this course, students should be able to: cite the history and evolution of the Juvenile Justice System; outline the present-day Juvenile Court process and procedure; identify the characteristics of juvenile offenders and their sub-culture; depict the process from arrest to final disposition for juvenile offenders; be acquainted with the variety of dispositions; differentiate between the adult and juvenile justice systems while understanding their ramifications; develop alternatives in incarceoatin; describe the conflicting theories and ideologies of treatment and prevention; identify the need for professional personnel and their respective manpower requirements; develop the necessary attitude, empathy and knowledge to assist in working in and with the juvenile justice system. (5-0-0) 5

CSC 3507 Criminal Personality and Behavior: Upon completion of this course, students should be able to: identify the various viewpoints of criminal behavior as described by the sciences of psychology, sociology, and psychiatry; develop a clear definition of criminal behavior; identify behavior that is normal versus that behavior which is considered anti-social; prepare a profile of a criminal type of person as defined by society; identify and evaluate treatment methods and define their rationale in dealing with criminal offenders; compare past theories of causes of criminal behavior to current research; identify the different personalities of the following: the mentally ill, aggressively violent, homicidal, sexual offender, and female offender. (5-0-0) 5

CSC 3510 Women in the Criminal Justice System : Upon completion of this course the students should be able to: Discuss an overview of the history of women as criminals and as workers in the Criminal Justice System; identify the major crimes most often committed by women in both victimless and violent crimes; state the differences and similarities between women and men offenders in the arrest, trial and sentencing outcomes and in the prison system; list the difficulties of incarcerated mothers, conditions of prisons, and women offenders in probation, parole, and community corrections; describe four theories of why women commit crimes; identify the roles of women in the criminal justice system as judges, attorneys, police, correction officers, and the problems they face; identify the problems of women as victims of crimes. (5-0-0) 5

***CSC 3524 Probation and Parole:** Upon completion of this course, students should be able to: discuss the origins of probation from common law through the present statutes; discuss the legal rights of prisoners in all aspects; describe how ordinary political or civil rights may be taken away as a result of criminal conviction and how they may be restored; describe parole revocation procedures from arrest, to hearing, through judicial review; discuss the types and kinds of conditions of probation; discuss group treatment programs; understand the various community resources available for the probationer and parole. *Prerequisite: CSC 3500. (5-0-0) 5

CSC 4505 Corrections/Rights and Sanctions: Upon completion of this course, students will perform an in-depth analysis of laws and court decisions that affect Correctional Staff and Prisoners, explore the responsibilities of Correctional Officers, Correctional Supervisors, Correctional Jails, and Prisoners. Special emphasis will be placed on laws and recent Supreme Court decisions affecting treatment of inmates and various agency responsibilities. (5-0-0) 5

CSC 4514 Corrections/Community Based Programs: Upon completion of this course, students should be able to: develop a concept (at least one page) of integration and acceptance of community programs within corrections/community based programs; develop methods of identifying and coordinating community resources; develop methods of identifying and coordinating communtiy responsibilities; develop and coordinate inmate involvement in community programs; conduct in-depth study of alternatives to incarceration. (5-0-0) 5

Dance

DAN 1184 Modern Dance I: Upon completion of this course, students should have acquired a sound understanding of the elements of dance with further emphasis on techniques, requiring a higher degree of skill. (0-3) 1

†*DAN 1185 Modern Dance II: Upon completion of this course, students should have acquired further mastery of modern dance technique, requiring a higher degree of skill. *Prerequisite: DAN 1184. (0-3) 1

†*DAN 1186 Modern Dance III: Upon completion of this course, students should have acquired technical mastery of modern dance skills at the elementary level and will have begun exploration into different qualities of movement and different spatial relationships utilized in dance. *Prerequisite: DAN 1185. (0-3) 1

†DAN 1194 Ballet I: Upon completion of this course, students should have acquired a firm understanding of body placement with further emphasis on technique, requiring a higher degree of skill and be able to perform simple practice exercises at the barre and in center floor. (0-3) 1

†*DAN 1195 Ballet II: Upon completion of this course, students should have acquired further mastery of skills in ballet techniques as well as simple movement combinations in center floor. *Prerequisite: DAN 1194. (0-3) 1

†*DAN 1196 Ballet III: Upon completion of this course, students should have acquired mastery of ballet techniques at the elementary level and have a working knowledge of basic performing skills. *Prerequisite: DAN 1195. (0-3) 1

†*DAN 1197 Ballet Pointe Work: Upon completion of this course, students should have acquired a knowledge of and a certain proficient execution of beginning pointe work, foot and leg strengthening exercises, and correct fitting and care of pointe shoes. *Prerequisite: DAN 1195 and permission of instructor. Corequisite: To be taken with an advanced technique class. See the division head for a current list of these classes. (0-3) 1

†DAN 1280 Dance for Musical Theatre: Upon completion of this course, students should be able to demonstrate alignment fundamentals and differences in styles basic to jazz, tap, and folk dance through classroom performance. (0-4) 2

DAN 1290 Dance Sources: Upon completion of this course, students should be able to: demonstrate in writing an understanding of the geographical, historical and social background of specific countries; demonstrate through performance the types and styles of dances characteristic of these countries. (1-2) 2

†*DAN 2184 Advanced Modern Dance I: Upon completion of this course, students should: have made significant progress in technique; have acquired an understanding of kinesthesis (body energy). *Prerequisite: DAN 1186. (0-3) 1

†*DAN 2185 Advanced Modern Dance II: Upon completion of this course, students should have acquired further mastery of modern dance skills and an understanding of musical structure and how it relates to phrasing in dance. *Prerequisite: DAN 2184. (0-3) 1

†*DAN 2186 Advanced Modern Dance III: Upon completion of this course, students should: have acquired technical mastery of modern dance skills at an intermediate level; have a firm working knowledge of the elements of dance; have been introduced to different dance selections representative of the modern dance repertoire. *Prerequisite: DAN 2185. (0-3) 1

†*DAN 2194 Advanced Ballet I: Upon completion of this course, students should: have made significant progress in technique; have achieved a performing proficiency of set patterns. *Prerequisite: DAN 1196. (0-3) 1

†*DAN 2195 Advanced Ballet II: Upon completion of this course, students should have acquired further mastery of ballet technique and the application of variables affecting performance. *Prerequisite: DAN 2194. (0-3) 1

†*DAN 2196 Advanced Ballet III: Upon completion of this course, students should have acquired mastery of ballet technique at an intermediate level as well as the ability to execute and perform complicated movement variations in extended sequences (more than one phrase). *Prerequisite: DAN 2195. (0-3) 1

***DAN 2284 Choreography I—Improvisation:** Upon completion of this course, students should be able to complete exercises utilizing spontaneous movement which creatively apply elementary principles of composition. *Corequisite: Must be enrolled in a Modern Dance technique class; see the division head for a list of these classes. (0-4) 2

***DAN 2285 Choreography II—Fundamentals of Composition:** Upon completion of this course, students should be able to demonstrate the elements of time and space as they relate to the fundamentals of dance composition. *Corequisite: Must be enrolled in a Modern Dance technique class; see the division head for a list of these classes. (0-4) 2

***DAN 2286 Choreography III—Dance Forms:** Upon completion of this course, students should be able to demonstrate the use of form within a dance and various techniques of manipulating a form. *Corequisite: Must be enrolled in a Modern Dance technique class; see the division head for a list of these classes. (0-4) 2

***DAN 2384 Dance Seminar:** Upon completion of this course, students will demonstrate through video performance, a basic knowledge of all aspects of the creation of a new ballet. The new work will be costumed and rehearsed for performance the following quarter. *Corequisite: To be taken in conjunction with one or more technique classes; see the division head for a list of these classes. (2-2) 3

***DAN 2388 Dance Production I:** Upon completion of this course, students will demonstrate through performance, a basic knowledge of both the artistic and technical aspects of dance production to include auditions, rehearsals, and performances before an audience. In addition to performing, students will have actively participated in lighting design and operation, costume design and construction, publicity, and operation of box office activities. *Corequisite: To be taken in conjunction with technique classes; see the division head for a list of these classes. (0-12) 3

†Does not meet humanities requirement.

Dental Assisting

*DEA 5104 **Dental Assistant Seminar:** This course is designed to discuss and evaluate clinical experiences gained during Dental Office Practice II. Emphasis will be placed on personal responsibilities as a practitioner, employee-employer relations, and problem solving techniques. Upon completion of this course, students should be able to develop personal responsibilities and demonstrate problem solving techniques. *Prerequisite: Fourth quarter standing in the Dental Assisting Program. (1-0-0) 1

*DEA 5201 **Microbiology for Dental Auxiliaries:** This is an introductory course designed to provide students with a basic background in the classification and characterizations of microorganisms. Upon completion of this course, students should be able to recognize and classify microorganisms as they relate to the oral cavity. Emphasis will be placed on sterilization, asepsis, and infection control within the dental environment. *Prerequisite: Acceptance into the Dental Assisting Program. (2-0-0) 2

*DEA 5202 **Oral Pathology:** Upon completion of this course, students should be able to describe the basic pathological processes and physical manifestations of selected diseases, their association with the oral cavity, and common pathological conditions of the teeth and oral cavity. Emphasis will be placed on the differences between normal and abnormal tissues. *Prerequisite: DEA 5400. (2-0-0) 2

*DEA 5301 **Office Emergencies and Pharmacology:** Upon completion of this course, students should be able to state dosage, methods of administration and storage of common drugs and medicaments used in the dental office and perform first aid and emergency care for the patient in the dental office. Emphasis is placed on the means and methods of preventing dental office emergencies, as well as on the administration of life saving treatments. Students will become certified in cardiopulmonary resusciatation. *Prerequisite: DEA 5400. (3-0-0) 3

*DEA 5303 **Oral Health Education:** Upon completion of this course, students should be able to implement a patient oral health program which will include oral hygiene instruction, methods of motivation, concepts of teaching, utilization of educational media, fluoridation as a preventive measure, and nutritional counseling concepts. Some emphasis will be placed on community health programs. *Prerequisite: Second quarter standing in the Dental Assisting Program. (2-0-3) 3

*DEA 5334 **Dental Office Management:** Upon completion of this course, students should be able to effectively manage a dental office. Emphasis will be placed on office management procedures, communication skills, telephone techniques, clinical records, appointment control, records management, filing systems, bookkeeping, dental insurance, collections, inventory control, and resume and job interview preparation. *Prerequisite: Third quarter standing in the Dental Assisting Program. (3-0-0) 3

*DEA 5400 **Anatomy for Dental Auxiliaries:** Upon completion of this course, students should be able to recall facts and specifics regarding the general anatomy of the body and basic concepts of the normal functions of body systems; identify oral structures with special emphasis on the identification of the primary and permanent dentition; identify the bones, muscles, blood, lymph, and nerve supply of the head and neck region; identify landmarks of the skull. *Prerequisite: Acceptance into the Dental Assisting Program. (4-0-0) 4

DEA 5425 **Clinical Procedures II:** This course is a continuation of Clinical Procedures I and is designed to further prepare the student in chairside dental assisting procedures with major emphasis on the role of the dental assistant in various dental specialties including endodontics, periodontics, orthodontics, prosthodontics, pedodontics, and oral surgery. Upon completion of this course, students should be able to identify and effectively handle dental equipment, instruments, and procedures involving the various specialties. *Prerequisite: Third quarter standing in the Dental Assisting Program. (3-2-0) 4

DEA 5502 **Introduction to Dental Assisting:** Upon completion of this course, students should know the purpose, history and progress of dentistry; understand all the laws and ethics governing the dental profession; identify members of the dental health team, their education, training, function and respective professional associations; demonstrate principles and procedures related to dental operatory equipment, instruments, sterilization, oral evacuation, instrument transfer and chairside dental assisting techniques with emphasis on four-handed dentistry. *Prerequisite: Acceptance into the Dental Assisting Program. (2-6-0) 5

*DEA 5514 **Dental Radiology:** Upon completion of this course, students should know the rationale and utilize methods for protecting the patient and operator from ionizing radiation, and the principles involved in the production of x-rays, correctly identify parts of the dental x-ray unit and discuss the function of these parts; be able to prepare a diagnostically acceptable series of dental x-rays using a variety of intraoral techniques; identify correctly and be familiar with extraoral techniques; be able to identify various processing equipment; process films in both the wet tanks and automatic processor; identify correctly anatomical landmarks; select appropriate film mounts and correctly mount a full series of radiographs; recognize errors in the placement, exposure and processing, and be able to correct them. *Prerequisite: Second quarter standing in the Dental Assisting Program. (2-6-0) 5

*DEA 5543 **Dental Office Practice I:** This course includes practice as a chairside and coordinating asistant in the on-campus dental clinic. Upon completion of this course, students should be able to perform at chairside with dentist and patient in general dentistry procedures; demonstrate the ability to apply classroom theory in the dental clinic in the areas of instrument transfer, oral evacuation, operatory preparation, radiology, sterilization, and laboratory procedures; demonstrate the ability to manage the clinic while functioning as the coordinating assistant. *Prerequisite: Third quarter standing in the Dental Assisting Program. (0-0-15) 5

*DEA 5544 **Dental Office Practice IIA:** Students will rotate through selected off-campus specialty offices, the Central Piedmont Dental Clinic, and the Charlotte Memorial Dental Clinic during the fourth quarter of the program. The program faculty will plan the student's experiences so that the student will be exposed to all facets of the dental office. Upon completion of this course, students should be able to apply all classroom theory and perform skills acquired in the dental office at competency level. *Prerequisite: Fourth quarter standing in the Dental Assisting Program. (0-0-15) 5

*DEA 5545 **Dental Office Practice IIB:** DEA IIB is an integral part of DEA 5544 IIA and carries the same objectives, activities, and course grade. (0-0-15) 5

*DEA 5700 **Dental Materials:** Upon completion of this

course, students should be able to demonstrate a knowledge of the theory of intra and extra oral materials on written and practical exams. Students must be able to demonstrate a sufficient level of skill in the laboratory and clinical application of routinely used dental materials. Through the integration of lecture and laboratory experience, students must be able to properly select and manipulate materials for any given procedure. *Prerequisite: Acceptance into the Dental Assisting Program. (3-8-0) 7

*DEA 5724 **Clinical Procedures I:** During this course students will utilize lecture, lab, and clinical experiences in order to become competent in chairside assisting in general dentistry. Upon completion of this course, students should be able to identify and effectively handle various types of dental equipment and instruments utilized in general dentistry; demonstrate proficiency in preparation of dental materials, assembling an anesthesia syringe, rubber dam placement and removal, matrix and wedge placement and removal; identify basic knowledge in general dentistry procedures. *Prerequisite: DEA 5502, DEA 5700. (2-6-6) 7

Dental Hygiene

*DEN 3202 **Head and Neck Anatomy:** Upon completion of this course, students will be able to name and locate the major bones and landmarks of the skull. In addition, students will be able to name and locate the major muscles of mastication and facial expression, and describe the action of these muscles. Students will also be able to describe the circulation of the blood in the head and oral region and locate the oral structures the various divisions of the trigeminal nerve supply, and list the oral structures each division affects, as well as describe the correct areas to administer local anesthetic to affect a specific oral structure. *Prerequisite: DEN 3401. (2-0-0) 2

*DEN 3203 **Office Emergencies:** Upon completion of this course, students will be familiar with the principles and procedures for first aid, including cardiopulmonary resuscitation. Students will learn the means and methods of preventing dental office emergencies, as well as the administration of life-saving treatments, and will become certified in Cardiopulmonary Resuscitation. *Prerequisite: BIO 1505. (2-0-0) 2

DEN 3223 **Dental Health Education:** Upon completion of Dental Health Education, students will be able to implement individual and group plaque control programs and demonstrate educational methods and concepts. Further, they will develop and present audio-visual materials, and stimulate individual or group behavior change via good communication. Students will also counsel individuals and groups on preventive dental health measures involving nutrition, oral physiotherapy, fluorides, accident prevention and periodic visits to the dentist. They will plan and develop a unit plan for group dental health education. (1-2-0) 2

*DEN 3300 **Introduction to Dental Anatomy:** This is a dental anatomy course that covers basic dental anatomy as it pertains to the permanent dentition. Students will become familiar with basic tooth morphology, arrangement of the teeth in the mouth, tooth names, structures, and specific distinguishing characteristics of each tooth. Effective methods of studying dental anatomy and its many facets are emphasized. DEN 3300 is offered cooperatively by the Dental Hygiene department and the Advancement Studies department. The course is usually offered Winter and Spring quarters. *Prerequisite or corequisite: EDU 9300 Effective Learning Skills. (3-0-0) 3

*DEN 3302 **Oral Embryology and Histology:** Students will be able to describe the embryological development of the head and neck with specific emphasis placed upon oral structures such as teeth, glands, tongue, etc. Recognition of oral defects including dental defects due to irregular development and their clinical significance will be evaluated by the students. They will gain microscopic and histologic knowledge of dental and oral structures, and will be encouraged to relate the knowledge gained from this subject to the clinical patient. *Prerequisite: DEN 3401, BIO 1504. (3-0-0) 3

*DEN 3401 **Dental Anatomy:** Upon completion of DEN 3401 students will be able to recall specific anatomical structures of the permanent and deciduous dentition, as well as identify extracted samples of each tooth. They will also demonstrate a familiarity with dental terminology, gross oral anatomy and classification of occlusion. *Prerequisite: Acceptance into the Dental Hygiene Program. (3-2-0) 4

*DEN 3411 **Preclinical Dental Hygiene I:** Upon completion of this course, students will have developed a personal philosophy of patient-centered care. They will gain knowledge and experience in the assessment phase of dental hygiene care, including aseptic technique, equipment care and maintenance, obtaining a medical history, performing an extra-oral and intra-oral examination, charting of oral conditions and recording periodontal findings. *Prerequisite: Acceptance into the Dental Hygiene Program. (2-4-0) 4

*DEN 3503 **Dental Radiology:** Students will recall the theory and fundamentals involved in the production of x-rays. They will be held responsible for knowing the safety precautions to be utilized and the legal implications involved in radiologic exposure. They will be adept in taking radiographs first on manikins, next on each other, and finally on clinical patients. Students will evaluate radiographs. *Prerequisite: DEN 3401. (3-4-0) 5

*DEN 3512 **Preclinical Dental Hygiene II:** Through practice on manikins, each other, and selected patients, students will demonstrate the ability to record, plan, and execute a dental prophylaxis maintaining aseptic conditions, without traumatizing hard and soft tissues. A familiarity with the instruments and their use is required. *Prerequisite: DEN 3411, DEN 3401. (2-6-0) 5

*DEN 3513 **Dental Hygiene I:** Students will accomplish a complete dental prophylaxis on a number of selected patients. Treatment plans for special patients will be considered. Increasing skill in charting and periodontal evaluation will be developed. Major consideration will be given to the removal of supragingival deposits and the developing of skill in detection and removal of subgingival deposits. *Prerequisite: DEN 3512. (2-0-9) 5

*DEN 4206 **Chairside Assisting:** Students will experience chairside assisting skills expected of a trained auxiliary. Students will be competent in four-handed dentistry, rubber dam placement, matrix band placement, and placement of temporary restorations, and will also place, condense, and carve an amalgam restoration on a manikin tooth. Students will also place pit and fissure sealants. *Prerequisite: DEN 4505. (1-2-0) 3

*DEN 4207 **Community Dental Health II:** Students will study resources available in the community to assist individuals and groups in meeting dental needs. They will identify a target group and spend ten weeks completing a needs assessment, developing a program plan, implementing the plan, and evaluating the results. The student will present the results along with statistics and a visual display as a final report to the class. *Prerequisite: DEN 4406. (1-0-3) 2

*DEN 4226 **Pharmacology:** Students will demonstrate a knowledge of pharmacological nomenclature and terms, sources of drugs, fundamental types of pharmacologic action, patient reaction to drugs and treatment of adverse reactions. Types and classes of drugs will be enumerated, They will write a general outline for a prescription and indicate a knowledge of the laws dealing with drugs. *Prerequisite: CHM 1505. (2-0-0) 2

*DEN 4305 **Periodontology:** Students will discuss principles of periodontics. They will describe, compute, and contrast techniques involved in periodontal treatment and maintenance therapy, and will be able to discuss each classification of periodontal disease according to definition, clinical characteristics, radiographic changes, and case management. *Prerequisite: DEN 3402. (3-0-0) 3

*DEN 4306 **Pathology:** Students will gain introductory knowledge of general and oral pathology with emphasis on recognition of disease conditions that the dental hygienist may encounter. They will be able to recognize common abnormalities, describe appearances or suspicious lesions and conditions, and recognize frequently encountered diseases and pathologic conditions. *Prerequisite: BIO 1504, BIO 1505, DEN 3402. (3-0-0) 3

*DEN 4406 **Community Dental Health I:** Upon completion of this course, students will relate the role of the dental professional in the dental health field. They will describe the prevalence and methods of prevention of dental disease, and will explore principles and delivery of dental care, identify principles of program planning, implementation and evaluation. *Prerequisite: DEN 3223. (3-2-0) 4

DEN 4407 **Dental Hygiene Practice—Issues and Trends, and Office Management:** As a result of this course, students will become aware of current issues and trends in dental hygiene practice. They will explore roles, values, ethics, and responsibilities as health care providers. They will also visit dental offices and observe various employment settings and share experiences and observations with classmates. (3-0-3) 4

*DEN 4505 **Dental Materials:** This is a course designed to introduce dental hygiene students to fundamental techniques and properties involved in manipulating materials used in the dental office. Students will gain clinical proficiency through actual application of laboratory procedures. *Prerequisite: CHM 1503. (3-4-0) 5

*DEN 4616 **Dental Hygiene III:** Sixth quarter dental hygiene students will gain proficiency in performing a complete oral prophylaxis on all patient classifications. Major emphasis is placed on increasing students' subgingival deposit removal skills. In addition, continued emphasis will be given to meeting the individual needs of the patient, along with clinical application of basic chairside assisting skills. *Prerequisite: DEN 4715. (1-0-15) 6

*DEN 4617 **Dental Hygiene IV:** Students will develop speed and efficiency in accomplishing a dental prophylaxis to prepare for entrance into the work market. Major emphasis will be placed upon the treatment of an increased number of patients during clinic sessions without sacrificing quality of care. Demonstration of exit level competencies for all practice tasks is required. Information will be gained concerning dental specialty practices. Self evaluations are utilized for determination of employment potential. *Prerequisite: DEN 4616. (1-0-15) 6

*DEN 4715 **Dental Hygiene II:** Dental hygiene students will gain proficiency in performing a complete oral prophylaxis on all classifications of patients, which will include plaque control instruction and detection and removal of all deposits within the capabilities of the fifth quarter dental hygiene student. Major consideration will be given to the refining of calculus detection skills. *Prerequisite: DEN 3513, DEN 3223. (2-0-15) 7

Dental Hygiene—Advancement Studies

*DEN 3300 **Introduction to Dental Anatomy:** A dental anatomy course that covers basic dental anatomy as it pertains to the permanent dentition. Students will become familiar with basic tooth morphology, arrangement of the teeth in the mouth, tooth names, structures, and specific distinguishing characteristics of each tooth. Effective methods of studying dental anatomy and its many facets are emphasized. DEN 3300 is offered cooperatively by the Dental Hygiene department and the Advancement Studies Division. The course is usually offered Winter and Spring quarters. *Prerequisite or corequisite: EDU 9300 Effective Learning Skills. (3-0-0) 3

Diesel Vehicle Maintenance

DSL 4400 **Automotive Diesel Engines:** Upon completion of this course, students should be able to: describe the operation and construction of diesel engines used in current production automobiles and light trucks; peform service tasks required in disassembly, inspection and reassembly of diesel engines and related components; diagnose and service diesel engine systems. (2-6) 4

DSL 5300 **Diesel Fundamentals:** Upon completion of this course, students should be able to: recognize the advantages of supercharging and aftercooling as it affects basic engine design and performance; recognize the advantages of direct and indirect fuel injection; describe four types of fuel injection metering systems; recognize the advantages of mechanical and hydraulic, limiting speed and variable speed engine governors; demonstrate the use of basic measuring instruments to determine engine component serviceability; demonstrate proper use of a nozzle tester; perform basic operations on and maintenance of a pump calibration stand. (2-3) 3

DSL 5304 **Hydraulics and Pneumatics:** Upon completion of this course, students should be able to: identify basic hydraulic components from a diagram drawn with standard hydraulic symbols; demonstrate a knowledge of vane, gear and piston pumps and motors; demonstrate a knowledge of pressure, flow and directional control valves; compute the volume and speed of cylinders; test the performance of a gear type fuel supply pump; discuss hydraulic terms; discuss tubing and fittings, hose and couplings; describe air compressors and air governors; identify basic components of a compressed air system. (2-2) 3

DSL 5308 **Air Brakes:** Upon completion of this course, students should be able to: describe the operation of various components of the air brake system; install repair kits in system control valves; discuss proper preventive maintenance procedures; repair wheel units including lining, drum, and brake chamber diaphragm replacement; repair cam and wedge type actuators; use test procedures to locate system problems. (2-2) 3

DSL 5314 **Diesel Engines I:** Upon completion of this course, students should be able to: describe 4.75 bore and 5.4 bore Caterpillar diesels; relate the importance of good maintenance to performance of the engines system; disassemble a typical Caterpillar diesel engine; demonstrate ability to use service manuals and parts books; assemble, crank and run engine. (1-6) 3

DSL 5315 **Diesel Engines II:** Upon completion of this course, students should be able to: describe the Cummins 855 series and L-10 series diesel engines; compare water-to-air and air-to-air after-cooling; relate possible advantages for better maintenance with the use of on-board computers; disassemble, inspect and reassemble a typical Cummins diesel; crank and run engine. (1-6) 3

DSL 5316 **Diesel Engines III:** Upon completion of this course, students should be able to: describe the Detroit two-stroke cycle and four-stroke cycle diesel engines; compare the advantages of computer controlled electronic fuel injection over mechanically controlled injection; disassemble, inspect and reassemble a typical Detroit diesel; crank and run engine. (1-6) 3

DSL 5317 **Diesel Engines IV:** Upon completion of this course, students should be able to: describe the Mack 6 cylinder domestic and import diesel engines; compare the operation of Mack's Dynatard engine brake and the Jacobs engine brake; describe the function and advantages of charge air cooling; disassemble, inspect and reassemble a typical Mack diesel engine; crank and run engine. (1-6) 3

DSL 5318 **Diesel Tune-Up and Troubleshooting:** Upon completion of this course, students should be able to: demonstrate a knowledge of the effects each engine system has on other engine systems; make test gage connections to check 4-stroke cycle and 2-stroke cycle engine systems; make complete tune-up on operational 4-stroke cycle diesel engines; make complete tune-up on operational 2-stroke cycle diesel engines; make proper connections to mount engine to dynamometer; make test run using dynamometer to check engine performance; use troubleshooting techniques to locate system problems on operational 2-stroke and 4-stroke cycle diesels. (2-3) 3

DSL 5319 **Fuel Injection Systems I:** Upon completion of this course, students should be able to: test the components of a typical gasoline fuel injection system; test and service fuel injection nozzles; demonstrate a knowledge of the Detroit unit injector; install and time a set of Detroit injectors in a live engine; demonstrate a knowledge of the Cummins injector; install a set of Cummins injectors in a live engine. (2-3) 3

DSL 5320 **Fuel Injection Systems II:** Upon completion of this course, students should be able to: demonstrate a knowledge of the Cummins PT fuel system; test rail pressure, test and set high and low idle; demonstrate a knowledge of the Caterpillar fuel system; demonstrate knowledge of the United Technologies, Bosch and C.A.V. fuel systems; test fuel setting, and set high and low idle on United Technologies and Bosch fuel systems. (2-3) 3

DSL 5400 **Heavy Duty Transmission Repair:** Upon completion of this course, students should be able to: assemble a heavy duty 5-speed transmission; install a bearing and light overhaul kit in a multi-range 10- or 13-speed twin-countershaft transmission; assemble to manufacturer's specifications a heavy duty automatic transmission; describe the operation of air valves and shift cylinders on multi-range transmissions. (2-6) 4

Drafting, Mechanical

DFT 3300 Advertising Drafting: Upon completion of this course, students should be able to: use drafting equipment to lay out simple geometric construction; letter words and numbers with standard lettering; lay out a typical title page; draw elementary orthographic drawings; produce simple ink drawings. (2-3) 3

***DFT 3314 Mechanical Computer Aided Drafting (CAD) —Small Systems:** Upon completion of this course, students should be able to: demonstrate the understanding of the graphic language of CAD; draw electronically elements of drawings such as lines, circles, arcs, curves, etc.; execute simple orthographic drawings electronically; dimension simple drawings. *Prerequisite: DTF 3404 or departmental permission. (1-6) 3

***DFT 3315 Mechanical Computer Aided Drafting (CAD) I-2D:** Upon completion of this course, using CAD equipment, students should be able to: show familiarity with and identify components of a large CAD system; demonstrate familiarity with the command systems; draw and dimension simple one-view object drawings; draw and project 3-view orthographic drawings; create isometric views of an object from 2-view drawing; and demonstrate familiarity with editing, dimensioning and manipulating the object. *Prerequisite: DFT 3404 or departmental permission. (1-6) 3

***DFT 3316 Mechanical Computer Aided Drafting (CAD) II-3D:** Upon completion of this course, using CAD equipment, students should be able to: enumerate and define the function of the components of a large CAD system; use the command language, including on-line aids, part structuring procedure, graphics generation and editing; define part concepts and parameters, news and construction planes; perform measurements and calculations related to 3D models; draw basic 3D models. *Prerequisite: DFT 3315. (1-6) 3

***DFT 3317 Computer Aided Drafting (CAD) III—Detailing:** Upon completion of this course, students should be able to: draw and dimension machine element detail such as threads, fasteners, and springs, gears and gearing, cams and cam followers, and other common machine elements; form mental images of 3-dimensional objects from blueprints and make clay models from them; produce basic weldment drawings. All drafting is done using CAD equipment. *Prerequisite: DFT 3315. (1-6) 3

***DFT 3318 Computer Aided Drafting (CAD) IV—Assembly:** Upon completion of this course, students should be able to draw and dimension outline assemblies, working assemblies, and subassemblies and produce simple piping drawings. All drafting is done using CAD equipment. *Prerequisite: DFT 3317. (1-6) 3

***DFT 3319 CAD Project:** Upon completion of this course, students will have completed a mechanical or manufacturing drafting project. It will consist of all the detail and part drawings, subassembly and assembly drawings, bill of materials and specifications that are necessary to convey the graphical and written information for the completion of a mechanical design or manufacturing processing documentation. All the work will be done using advanced CAD equipment. *Prerequisite: DFT 3318. (1-6) 3

DFT 3400 Electrical-Electronics Drafting: Upon completion of this course, students should be able to: use drafting equipment to lay out simple geometric construction; letter words and numbers; draw and dimension elementary orthographic drawings; prepare from a rough circuit sketch the following simple electrical and electronic drawings: electrical schematic, wiring diagram, electronic schematic, printed circuit layout, component layout for printed circuit, and ladder diagram. (2-6) 4

DFT 3404 Mechanical Drafting I: Upon completion of this course, students should be able to: use drafting equipment and instruments; letter words and numbers in Gothic style; draw orthographic and pictorial freehand sketches; lay out geometric constructions; execute orthographic drawings by use of instruments; dimension drawings and apply notes to drawings; reproduce, file and store drawings; and execute simple "working" drawings. (2-6) 4

***DFT 3405 Mechanical Drafting II:** Upon completion of this course, students should be able to: apply orthographic projection principles to more complex drafting problems, including those with various kinds of holes; read and draw the conventions of line elimination and revolving out of position; read, draw and dimension the various kinds of sectional views; and read, draw and dimension auxiliary views; read, draw and dimension pictorial views. *Prerequisite: DFT 3404. (2-6) 4

***DFT 3406 Descriptive Geometry:** Upon completion of this course, students should be able to: analyze and solve graphically space problems which involve points, lines and planes; verify solutions to problems analytically when appropriate; relate these problems in engineering design, and visualize the field problem shown on paper. *Prerequisite: DFT 3405. (2-6) 4

***DFT 3407 Mechanical Drafting III:** Upon completion of this course, students should be able to: visualize, draw and dimension machine element details such as: threads, fasteners and springs; gears and gearing; cams and cam followers, and other common machine elements; form mental images of three-dimensional objects from standard blueprints and make clay models from them; and produce basic weldment drawings. *Prerequisite: DFT 3405. (2-6) 4

***DFT 3408 Mechanical Drafting IV:** Upon completion of this course, students should be able to: draw and dimension outline assemblies, working assemblies and sub-assemblies; and produce simple piping drawings. *Prerequisite: DFT 3407. (2-6) 4

DFT 4300 Mechanical Blueprint Reading: Upon completion of this course, students should be able to: visualize a three-dimensional object; relate the shape and size correctly and accurately to a pictured object; read and understand drawing conventions, symbols and notations; interpret the proper operations and shop procedures needed to produce objects shown on simple prints. (3-0) 3

***DFT 4-94 Independent Study:** This course is designed to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student works under the supervision of a sponsoring staff member. *Approval of the sponsor and program director is required prior to enrollment. (1-5 credits)

Drama

DRA 1300 Introduction to Drama: Upon completion of this course, students should: have developed skills in analyzing the nature of the theater and the nature of drama; demonstrate mastery of the principles of play analysis and an understanding of the fundamentals of technical production. (3-0) 3

DRA 1301 Stagecraft: Upon completion of this course, students should have a working knowledge of theater buildings and their equipment, working drawings, and scene shop organization. They will have had practice in scenery construction and painting. Participation on technical crews of the College theater productions required. (1-4) 3

DRA 1302 Scene Design: Upon completion of this course, students should: have researched and developed scene designs for a variety of presentation styles and theater stages; demonstrate an understanding of current design practices. (1-4) 3

DRA 1303 Acting: Upon completion of this course, students should have acquired practice in developing and controlling the voice, body and emotions as instruments of expression. Each student will be encouraged to free and use imaginative resources and critical faculties through controlled practice. (1-4) 3

***DRA 1304 Advanced Acting:** A continuation of DRA 1303. Upon completion of this course, students should demonstrate an understanding of more advanced acting theories with special attention given to verse drama, musical theater, and specialized stage movement and exercises. *Prerequisite: DRA 1303 or consent of instructor. (1-4) 3

DRA 1307 Theatre Today: A study of six plays, including dramas being performed in the Charlotte area. Upon completion of this course, students should: have an understanding of drama as a performing art; be able to recognize the elements of drama and to distinguish between tragedy, comedy, farce and melodrama; be able to recognize classicism, romanticism, realism, expressionism, surrealism and absurdism in drama; have developed criteria for evaluating a dramatic performance. (3-0) 3

DRA 1310 Play Production—One Acts: Upon completion of this course, students should demonstrate an understanding of the basic practices and principles governing the staging of one-act plays. The laboratory consists of the rehearsing and performing one-act plays. (0-12) 3

DRA 1311 Play Production—Comedy/Drama: Upon completion of this course, students should demonstrate an understanding of the basic practices and principles governing the staging of a full-length comedy or drama. The laboratory consists of the rehearsing and performing of full-lenth production of a comedy or drama. (0-12) 3

DRA 1312 Play Production—Musical: Upon completion of this course, students should demonstrate an understanding of the basic practices and principles governing the staging of musicals. The laboratory consists of rehearsing and performing a full-scale production of a musical. (0-12) 3

DRA 2204 Special Problems in Drama: An advanced problems course of guided studies involving laboratory and library work. (1-3) 2

DRA 2303 Acting for the Camera: Following completion of this course, students should have acquired practice in acting for television commercials, as well as experience before print photographers, and have a working knowledge of the video studio equipment. (1-4) 3

DRA 2304 Directing: Upon completion of this course, students should demonstrate a knowledge of the theories related to directing a stage production and will have directed scenes for evaluation. (1-4) 3

DRA 2311 Advanced Play Production—Comedy/Drama: Upon completion of this course, students should have mastered processes of script analysis, role playing of major proportions and extended rehearsal and performance. Special attention is given to each participant mapping out and completing a strategy for successful final performance before an audience. (0-12) 3

DRA 2312 Advanced Play Production—Musical: Upon completion of this course, students should have demonstrated a thorough knowledge of script analysis, character building, and extended performance of a musical production. Special attention is given to each participant mapping out and completing a strategy for successful performance before an audience. (0-12) 3

DRA 2414 Film Criticism: Through discussion and film screenings, students should be able to develop a critical appreciation for the elements of film and should be able to formulate a critical response to the film medium in writing and in conversation, demonstrating an intelligent reaction to any film. (3-2) 4

Drug Administration—Advancement Studies

***DRG 9502 Basic Calculation for Drug Administration:** A mathematics and systems preparation course for students who will enter *ANY* of the health curricula. Mathematics framework, metric system, apothecaries system, ratio and proportion, temperature conversions, household system, tablet dosages, solutions, and insulin dosages are the units available for study. *Prerequisite: Completion of MAT 9500 or consent of the instructor. EDU 9300 Effective Learning Skills is highly recommended as a prerequisite or corequisite. (5-0) 5

Economics

ECO 2304 Economics I: Upon completion of this course, students should be able to: apply economic concepts to basic and current national problems; trace the development of economic philosophies as they relate to traditional, command, and market economics; evaluate the role of federal programs in the areas of GNP, monetary and fiscal policy, and business cycles; demonstrate ability to use primary sources in understanding economic problems. (3-0) 3

***ECO 2305 Economics II:** Upon successful completion of this course, students should be able to discuss consumer and business choice by analyzing market demand and supply elasticity; explain the various market structures of pure competition, monopolistic competition, oligopoly and monopoly; and discuss "real world" issues concerning industrial organizations, unions, government antitrust and regulation policy. *Prerequisite: ECO 2304. (3-0) 3

***ECO 2306 Economics III:** A course designed for the advanced economics students to expand knowledge of principles and techniques acquired in prerequisite courses and to relate that knowledge to the various contemporary problems, i.e., housing, energy, the environment, education, transportation, international trade. Upon successful completion of the course, students should be able to: discuss the economic approach to the problems mentioned above; discuss international trade, protectionism, foreign exchange and payments; analyze the importance of economic growth and productivity; and explain the problems of the less-developed countries, *Prerequisite: ECO 2304, ECO 2305. (3-0) 3

ECO 3300 **Introduction to Economics:** This course is designed for students who are interested in a broad overview of economics. Upon completion of this course, students should be able to: discuss the various types of economic systems; analyze some of the goals and problems, i.e., unemployment, inflation, and production of our economy; discuss consumer choice by analyzing the concepts of demand supply and elasticity; describe the role of the government in the macroeconomy; describe monetary and fiscal policy; explain business competition, labor markets and unions; and discuss international trade. (3-0) 3

Education

EDU 2500 **Introduction to Education:** Upon completion of this course, students should demonstrate a knowledge of the development and present status of education in American society with attention given to the objectives of democratic education and the role of the teacher in their implementation. *(Does not satisfy Social Science reuqirement.)* (5-0) 5

Electrical Installation and Maintenance

ELC 5200 **Electrical and Building Trades Blueprint Reading:** Upon completion of this course, students should be able to: interpret schematics and blueprints applicable to electrical installation; draw floor plans and indicate the electrical outlets as required by the National Electrical Code; read sectional views; explain specifications related to the building trades; discuss the types of materials used in construction trades; determine branch circuit sizing for lighting, motors, and electrical equipment; explain three-phase and single-phase services. (1-2) 2

ELC 5310 **Electrical Schematics:** Upon completion of this course, students should be able to: identify symbols and abbreviations used in control circuits; draw one-line diagrams illustrating power and branch circuits; change a wiring diagram into a ladder diagram; describe how disconnects, overcurrent protection, overload relays, control devices, and motors are used in control circuits and how each is represented on a schematic. (2-3) 3

ELC 5401 **Basic Calculations for Electricians:** Upon completion of this course, students should be able to: apply the principles of addition, subtraction, multiplication and division to problems related to the electrician's trade; calculate ratio and proportion; manipulate fractional and decimal numbers; use algebraic equations to solve problems encountered in the electrical field; understand trigonometric functions and their application to right angles; describe vectors and their use in alternating current applications. (4-0) 4

ELC 5405 **Basic Control Systems:** Upon completion of this course, students should be able to: change decimal numbers into binary, octal, or hexadecimal values; demonstrate various types of logic circuits and their truth tables; explain the use of program programmable controllers and install input/output devices to the processor; describe how programmable controllers are used to control circuits without the use of external timers, counters, relays, and other electrical devices; explain how the speed of AC and DC motors can be controlled. (2-6) 4

*ELC 5510 **Industrial Electronics I:** Upon completion of this course, students should be able to: describe the fundamentals, operating characteristics and application of solid state devices, electronic theory as it applies to circuit protective devices, relays, limit switches and sensing devices; describe electromechanical logic; disassemble, replace parts and reassemble electro-mechanical devices. *Prerequisite: ELC 5901. (3-6) 5

*ELC 5520 **Industrial Electronics II:** Upon completion of this course, students should be able to: demonstrate safety precautions in working with electronic/electrical circuits; use various types of timers in electronic circuits; list and illustrate the use of counters, pneumatic timers, and solid state timers; list and illustrate the use of various types of logic control circuits; discuss the use of fiber optics, digital circuits, and analog circuits as used in industry; identify types and use of electronic sensing devices in electronic circuits. *Prerequisite: ELC 5510. (3-6) 5

ELC 5802 **Alternating Current and Direct Current Machines and Controls:** Upon completion of this course, students should be able to: describe the fundamental concepts in single and polyphase alternating current circuits; use electrical test instruments in circuit analysis; describe the basic concepts of AC/DC machines and simple systems control; describe the operation of, install, and perform tests on controls such as thermostats, control relays, solid-state timers, and pneumatic devices; state the theoretical concepts involved in the use of transformers. (4-12) 8

ELC 5803 **Residential Wiring:** Upon completion of this course, students should be able to: interpret floor plans to lay out electrical circuits; determine circuit sizing, wire sizes, and overcurrent protection sizing; install switching circuits, small appliance circuits, receptacle outlets, and special purpose circuits; discuss the rules that apply to residential wiring using the National Electrical Code as the reference. (5-9) 8

ELC 5901 **Direct and Alternating Current:** Upon completion of this course, students should be able to: explain the structure of matter and the properties associated with matter; the relationship between voltage, current and resistance in series, parallel and series/parallel circuits; utilize Ohm's Law, Power Law, and Kirchoff's Law; describe the difference between direct current and alternating current; explain how electrical properties such as capacitance, inductance, voltage, amperage and resistance affect the circuit; list and describe the use of test instruments and how they are connected in a circuit. (5-12) 9

ELC 5904 **Commercial and Industrial Wiring:** Upon completion of this course, students should be able to: plan and lay out wiring systems in commercial and industrial complexes, install service and feeders using metallic and non-metallic conduit and wires, install panelboards, switchboards, bus duct systems and underfloor duct systems, install motors and auxiliary devices; perform maintenance on all systems; describe the importance of preventive maintenance in building electrical systems. (5-12) 9

English—Communications

*COM 1304 **Introduction to Communications:** This course deals with the development and improvement of thinking skills and the effective use of language, particularly in writing multiparagraph assignments. Upon completion of this course, students should be able to recognize and use such logical processes as causation, comparison-contrast, classification and analysis. They should also be able to evaluate and revise their own writing. *Prerequisite: Approved placement exam score, successful completion of ENG 9510, or consent of department head. (3-0) 3

*COM 1305 **English Composition II:** This course is designed to provide students with opportunities to develop critical thinking skills which will be used in writing compositions based upon the students' analysis and interpretation of prose selections, including the short story and the novel. Some secondary sources will be used in addition to the fiction. *Prerequisite: COM 1304 or consent of department head. (3-0) 3

*COM 1306 **English Composition III:** Upon completion of this course, students should be able to use basic research techniques to write a formally documented research paper. They should also be able to write critically and objectively about ideas expressed in drama and poetry. *Prerequisite: COM 1305 or consent of department head. (3-0) 3

COM 1324 **Creative Writing:** This course is designed to provide students with the opportunity to practice the craft of writing, to find pleasure in writing as a means of self-expression, and to explore techniques which aid in sharpening their writing styles. Emphasis is placed on the basic elements of fiction and poetry. Students' writings are read and analyzed in class. (3-0) 3

*COM 1325 **Advanced Creative Writing:** For students with creative work already in progress, this course probes the practical aspects of technique, style and development with an emphasis on the short story and poetry. Students' writings are analyzed in class. Attention is given to the process of revision—of refining and shaping the work into a polished form. *Prerequisite: COM 1324 or consent of department head. (3-0) 3

*COM 2390 **Individual Study:** This course provides students with the opportunity to develop a special program of studies to meet a particular need not met by other offerings of the department. Objectives will be determined by the student and the sponsoring instructor. *Prerequisite: Approval of the sponsoring instructor and the department head. (3-0) 3

*COM 3301 **Writing for Law Enforcement:** Upon completion of this course, students should be able to spell and define vocabulary commonly used in police reporting. They should also be able to write a grammatically and mechanically correct report based on appropriate field notes which consist of a precise. objective narration using accepted law enforcement forms and formats. *Corequisite: Acceptance into Charlotte Police Academy. (3-0) 3

*COM 3305 **Communications II:** Upon completion of this course, students should be able to prepare various types of business communications including letters, memoranda and resumes. They should also be able to demonstrate application of the basic principles of English by developing adequate sentences, paragraphs and whole compositions. *Prerequisite: COM 1304 or consent of department head. (3-0) 3

*COM 3306 **Communications III:** Upon completion of this course, students should be able to use multiple resources to research, develop and write a report pertaining to their chosen program and should be able to prepare various types of communications including formal definitions, descriptions of mechanisms and processes. *Prerequisite: COM 3305 or consent of department head. (3-0) 3

COM 3515 **Advanced Grammar:** Upon completion of this course, students should be able to identify constructions, forms and usages of words and the relationship of words within a sentence. They should also be able to compose sentences according to given structural patterns and to apply basic rules of grammar. (5-0) 5

*COM 4324 **Copywriting I:** In this course, students will learn the basics of writing effective copy for print media (newspapers and magazines). They will produce copy and layouts, and be able to fit copy using appropriate type specifications. *Prerequisite: COM 1304. (3-0) 3

*COM 4325 **Copywriting II:** In this course, students will apply copywriting basics to produce copy for broadcast media (radio and television) and outdoor advertising in appropriate formats to include storyboard for television. *Prerequisite: COM 4324 or consent of department head. (3-0) 3

COM 5500 **Communications Skills:** Upon completion of this course, each student should be able to: spell and define words directly related to the student's technical or trade area; write job-related letters and a personal resume; discuss a given topic both orally and in writing; demonstrate familiarity with periodicals in the student's trade field. (5-0) 5

English—Literature†

*LIT 2314 **Contemporary Fiction:** This course is a study of writers who have published distinguished fiction since 1945. Upon completion, students should: have studied selected works of these writers; recognize philosophical, ethnic, regional, and stylistic trends reflected in the literature; have greater competence in analyzing literature. *Prerequisite: COM 1306 or consent of department head. (3-0) 3

*LIT 2320 **Special Topics:** This is an advanced course in which students and the instructor select a topic for in-depth study. *Prerequisite: Approval of the supervisory instructor and the department head. (3-0) 3

*LIT 2324 **The Bible as Literature:** This course is a study of selected portions of the Bible. Upon completion, students should recognize the Bible as literature, containing myth, legend, saga, lyric poetry, drama, short story and biography; be able to identify Judeo-Christian ideas as they are reflected in the material studied; be able to state changes in concepts and values during the span of Biblical history. *Prerequisite: COM 1306 or consent of department head. (3-0) 3

*LIT 2504 **British Literature, 1300-1800:** This course is a study of selected works of British writers before 1800, with emphasis on Chaucer, Shakespeare and Milton. Upon completion of this course, students should: be familiar with selected works of the writers of the period; have an awareness of the development of the English language and of literary trends during the period; be able to analyze the liteature read in terms of form and content. *Prerequisite: COM 1306 or consent of department head. (5-0) 5

*LIT 2505 **British Literature, 1800-Present:** This course is a study of selected works of British writers since 1800, including Wordsworth, Coleridge, Byron, Shelley, Keats, Browning, Tennyson, Eliot, Conrad, Shaw, Hardy and Yeats. Upon completion, students should: be familiar with selected works of the writers studied; be able to characterize romantic, Victorian and modern British literature; be able to analyze the literature read in terms of form and content. *Prerequisite: COM 1306 or consent of department head. (5-0) 5

*LIT 2514 **American Literature, 1800-1900:** This course is

† ***Satisfies Humanities Requirement. See also, HUMANITIES.***

a study of selected works of American writers before 1900, with emphasis on Poe, Hawthorne, Melville, Emerson, Thoreau, Whitman, Twain and Dickinson. Upon completion, students should: have a knowledge of the lives and representative works of the writers studied; have a knowledge of how each writer reflects certain trends of society; be able to identify literary devices and techniques used by the writers and to show greater competence in interpreting, analyzing and evaluating literature, and in discerning meanings and ideas in literature. *Prerequisite: COM 1306 or consent of department head. (5-0) 5

*LIT 2515 **American Literature, Modern:** This course is a study of selected works of major American writers, including Crane, James, Robinson, Frost, O'Neill, Anderson, Dreiser, Hemingway, Wolfe, Faulkner, Fitzgerald, and Bellow, with emphasis on their interpretations of the modern era. Upon completion, students should: have a knowledge of the lives and representative works of the writers studied; have a knowledge of how each writer reflects certain trends of society; be able to identify literary devices and techniques used by the writers; be able to show greater competence in interpreting, analyzing and evaluating literature; and in discerning meanings and ideas in literature. *Prerequisite: COM 1306 or consent of department head. (5-0) 5

†*Satisfies Humanities Requirement. See also, HUMANITIES.*

English — Advancement Studies

ENG 9500 **Learning to Write:** An individualized self-paced course, composed of an introduction to writing techniques, grammar labs, introduction to the use of Word Processors, helping groups, sentence combining, and discovering and improving the students' writing process. The course is designed to meet the needs of students who lack the necessary English grammar background to express themselves in sentences. When students have completed ENG 9500, they should be able to write clear, concise and correctly punctuated sentences both in singular sentence form and within paragraphs. (5-5) 5

ENG 9505 **Spelling and Vocabulary:** An individualized self-paced course designed to help teach the student how to pronounce speech sounds, how to pronounce words, and how to spell. The course consists of the study of speech sounds, their common spellings and production, a study of spelling rules, and a vocabulary study which is relevant to the student's program. At the completion of ENG 9505 a student's spelling, pronunciation and vocabulary of standard English should improve with careful study and exercise practice. (5-0) 5

*ENG 9510 **Fundamentals of Writing:** An individualized self-paced course designed to meet the needs of students who are preparing to enter college transfer, technical or communication courses. However, any student may enroll in the course. Upon completion of ENG 9510, students should be able to demonstrate that they have developed effective communication skills by writing and proofreading paragraphs and themes. *Prerequisite: ENG 9500 or Prentice-Hall Test. (5-0) 5

English as a Second Language

ESL 9102 **Basic Survival ESL:** Basic Survival English as a Second Language is a crash course especially designed for foreign-born persons whose temporary stay in the United States does not coincide with the College regular scheduling of classes. The multi-entry/multi-exit nature of this class allows for intensive English exposure on self-paced basis, including a battery of situational and conversational lab activities, all designed for upgrading oral and aural communication skills. Upon completion of this course, students should be able to ask and answer questions pertaining to greetings, personal identifications, time, money, etc. (0-2) 1

*ESL 9190 **Teaching English as a Second Language:** This course is designed to familiarize students with methods used in the art of teaching English as a second language, or any language other than the native one. Upon completion of this course, students should be able to identify, test and place students of English as a Second Language properly according to their proficiency levels. *Prerequisite: departmental consent. (1-0) 1

*ESL 9201 **Driver's Education—Traffic Signs, Symbols and Regulations:** This course is designed to prepare foreign-born residents and full-time students with vocabulary and interpretive skills necessary to obtain the North Carolina Learner's Permit. Upon completion of this course, students should be able to meet the requirements to obtain the Permit. *Prerequisite: must possess a valid visa or alien registration card. (2-0) 2

ESL 9301 **English Through Music:** The purpose of this course is to acquaint the non-English student with the standard American pronunciation and to improve expression, intonation and vocabulary by using music and the International Phonetic Alphabet. Upon completion of this course, students should be able to demonstrate evidence of improved pronunciation and vocabulary, self-confidence, and cultural adjustment. (3-0) 3

ESL 9303 **The American Way:** This course is designed to introduce the foreign-born students to all facets of life in the United States through lecture, demonstration, visual aids and discussion. It is hoped that the informal class discussion will help students better understand the reasons for actions and attitudes of the citizens of the United States and to be able to compare the similarities and differences between their native country and the United States. (3-0) 3

ESL 9304 **American Citizenship:** This course is designed to prepare foreign legal residents to become American citizens. Upon completion of this course, students should be able to pass the Citizenship and Naturalization Test administered by the Immigration and Naturalization Service. (3-0) 3

ESL 9310 **English Handwriting:** This course is designed to teach cursive English handwriting to non-English speaking persons. Upon completion of this course, students should be able to write legibly both in cursive and manuscript forms, recognize all the letters of the alphabet, and analyze them phonetically. Students should be able to transcribe from one form to the other, maintaining differentiation between capital and lower case letters. (3-0) 3

ESL 9504 **Conversational English I:** This course is designed to provide the non-English speaking person with the basic English language skills to meet essential communication needs; that is, to provide the foreign student with survival English. Upon completion of this course, students should be able to ask and answer simple questions using English vocabulary learned in the course. (3-4) 5

*ESL 9505 **Conversational English II:** An intermediate level conversational course designed to help foreign-born individuals overcome the inhibitions of speaking English as a

second language. Upon completion of this course, students should be able to make a 5-10 minute speech on a subject of their own choice using correct English grammar and pronunciation. *Prerequisite: ESL 9504 or departmental consent. (3-4) 5

*ESL 9506 **Conversational English III:** This course is designed to increase the ability and confidence of foreign nationals in verbal expression. Upon completion of this course, students should be able to express their own ideas, feelings, preferences and impressions clearly in short, formal verbal presentations using correct English structure and pronunciation. Students also have the opportunity to give a 20-minute speech and to answer questions on a subject of their choice. *Prerequisite: ESL 9505 or departmental consent. (5-0) 5

ESL 9514 **Grammar I:** This course is designed to provide foreign-born students with the basic parts of speech of English grammar. Upon completion of this course, students should be able to: use common verbs, nouns and adjectives correctly in oral and written communications; demonstrate knowledge of the three forms of sentences; apply correctly the rules of capitalization and punctuation; write simple paragraphs which demonstrate knowledge of the structure of simple sentences. (3-4) 5

*ESL 9515 **Grammar II**: This course is designed to increase the basic English grammar skills of foreign students. Upon successful completion of this course, students should be able to discriminate correctly between the use of the progressive and simple forms of the past, present and future tenses; form and use the present perfect and past perfect; understand and use basic modal verbs, including selected past-time forms; form and use the passive voice in all tenses; produce sentences which include simple noun clauses and adjective clauses. *Prerequisite: ESL 9514, or a score or 31-66 on the ESL Placement Test, or departmental consent. (3-4) 5

*ESL 9516 **Grammar III**: This course is designed to complete the English grammar skills of foreign nationals. Upon completion of this course, students should be able to: use modal auxiliaries, noun clauses, including reported speech, and use adverbial clauses with an emphasis on correct verb tenses, and sentences using "if" and "unless." *Prerequisite: ESL 9515 or departmental consent. (3-4) 5

ESL 9524 **Vocabulary I:** This course is designed to provide international students with the basic and functional vocabulary necessary for daily living. Emphasis will be placed on writing, reading, speaking and using synonyms to convey quickly the meaning and the usage of the vocabulary being taught. Upon completion of this course, students should be able to recognize, define and use correctly in writing the vocabulary taught in this course. (3-4) 5

ESL 9525 **Vocabulary II**: This course is designed to provide international students with a low intermediate level of vocabulary, broader than ESL 9524. Emphasis will be placed on writing, reading, speaking and defining approximately 200 new vocabulary words. New vocabulary is taught in the context of daily life and is used in written exercises. Upon completion of this course, students should be able to recognize, define, pronounce, use and spell correctly the vocabulary taught in this course. *Prerequisite: ESL 9524, or departmental consent. (3-4) 5

*ESL 9526 **Vocabulary III—American Idioms:** This course is designed to provide advanced international students with the special vocabulary and meaning conveyed through idiomatic expressions. It is an objective and concise study of the most common American idioms and their usage in speech and writing. Upon completion of this course, students should be able to comprehend the idioms in reading passages, conversation, and use them in speech and in writing. *Prerequisite: ESL 9525 or departmental consent. (3-4) 5

*ESL 9534 **Academic English:** This course is designed to develop the writing skills of foreign-born students by preparing them for their academic programs. This course is also intended to prepare students to take part two of the TOEFL test. Upon completion of this course, students should be able to demonstrate college level mastery of grammatical, writing and reading skills and pass part two of the TOEFL test. *Prerequisite: ESL 9525 or a score of 31-66 on the ESL Test, or departmental consent. (3-4) 5

ESL 9544 **TOEFL Preparation I:** This course is designed to prepare foreign-born students to pass section one of the TOEFL with a minimum score of 55. Emphasis is placed upon developing test-taking skills. Upon completion of this course, students should be able to identify correct written details after listening to a spoken passage; identify correct written rephrasing of a spoken statement; and identify grammatical mistakes in prepared written statements. (4-2) 5

*ESL 9545 **TOEFL II**: This course is designed to prepare foreign-born students to pass section three of the TOEFL with a score of 55. Emphasis is placed upon test-taking skills. Upon completion of this course, students should be able to: use stems and affixes to analyze the meaning of words; use advanced knowledge of English grammar to follow the flow of ideas in a written passage; identify the meaning of new vocabulary from context; identify correct rephrasing of written statements; read passages and correctly identify details, inferences, and main ideas. *Prerequisite: Successful completion of ESL 9516 or departmental consent. (4-2) 5

Finance

FIN 3303 Personal Investing: In this introductory course in investments, students will learn how to define investments and describe how one should go about investing; analyze returns on investments using financial ratios; discuss securities markets and regulation of securities markets; understand terminology and terms pertinent to stocks, bonds and other securities; discuss various investments such as insurance, investment companies, REIT's, mutual funds and tax-sheltered annuities. (3-0) 3

FIN 3314 Business Mathematics I: In this introductory business mathematics course, students will apply arithmetical functions to business situations. Whole numbers, fractions, decimals and simple equations are reviewed. Percentage, base and rate problems with specific application for sales and property taxes are covered. Students will also study payrolls, insurance and banking. (3-0) 3

*FIN 3315 **Business Mathematics II:** In this continuing business mathematics course, students will apply the basic arithmetical functions to the following business situations: retailing (including discounts, markups and markdowns), financing (including simple and compound interest, installment and real estate loans) and present value and annuities. Students will draw graphs, make simple statistical calculations and learn about investments. Prerequisite: FIN 3314. (3-0) 3

FIN 3330 Real Estate Arithmetic: Upon completion of this course, students will have demonstrated competency in applying basic arithmetical processes to solving problems in real

estate including the following: geometric diagrams, commissions, profits and losses, appreciation and depreciation, interest, financial packages, taxes, insurance, capitalization and investments. (3-0) 3

FIN 4303 Personal Estate Planning: In this introductory course in estate planning, students will learn how to: determine the present condition of their estates; establish personal objectives and goals based on relevant assumptions; develop a plan to increase their wealth; conserve estate values by minimizing estate taxes and costs; put together an estate planning team; conduct periodic reviews of the estate plan. (3-0) 3

***FIN 4317 Financial Statement Analysis:** This course is a study of the fundamentals of the major financial statements used in accounting with particular emphasis on the balance sheet and income statement. Students will be able to demonstrate satisfactory competency in the application of various techniques of analysis to determine financial position and to interpret operating results. *Prerequisite: ACC 1604. (3-0) 3

***FIN 4334 Business Finance I:** Upon completion of this course, students will have demonstrated an understanding of a variety of topics related to business finance. Specific areas of study include the basic forms of business organization, taxes, financial markets, ratio analysis, cash budgeting, present value concepts and capital budgeting. *Prerequisite: ACC 1604. (3-0) 3

***FIN 4335 Business Finance II:** Upon completion of this continued study of business finance, students should be able to determine the cost of specific types of capital and explain the financing of corporations and other business entities. Additional topics include capital structure, leases, corporate dividend policies and working capital management. *Prerequisite: FIN 4334. (3-0) 3

***FIN 4336 Financial Management:** This course covers finance functions relating to buying, operating and selling a business. Emphasis is placed on problem solving and the development of analytical skills rather than on theory. The case method is used to develop and reinforce problem-solving skills. Students will demonstrate their ability by: solving case problems related to these functions; defining and explaining valuation, financial analysis, and capital budgeting; applying a variety of techniques for managing working capital, inventories and other business assets. *Prerequisite: FIN 4335. (3-0) 3

FIN 4350 Personal Money and Financial Management I: This is a consumer oriented course designed to enable students to become better consumers. When completed, students should have demonstrated knowledge of: consumer laws, protection and remedies; family budgeting and financial planning; housing needs; transportation needs; uses of credit and its related problems. Awareness of consumer rights and responsibilities on the part of each student is emphasized throughout the course. (3-0) 3

FIN 4390 Personal Money and Financial Management II: A continuation of **FIN** 4350, this course is designed to enable students to become better consumers. Long-range planning is the major emphasis. Upon completion of the course, students should be able to make a long-range financial plan for the family; determine insurance needs; understand retirement income planning; understand estates, wills, trusts, and their uses; and determine the need for professional help from lawyers, accountants, bankers and others in their planning. (3-0) 3

FIN 4400 Analyzing Financial Statements—AIB: This is a specialized course designed for students enrolled in the AIB/Banking and Finance Programs. Upon completion of this course, students should be able to: describe the need for credit investigation and appraisal; define and describe financial statement analysis; prepare financial statements including the income statement and balance sheet; apply analytical formulae to interpret these statements; prepare a cash budget and operating budget. (4-0) 4

Fire Protection

FIP 3301 Fire Prevention Programs and Public Relations: Upon completion of this course, students should be able to: list and discuss the principles and applications of fire prevention related to the community and industrial plants; discuss the development and maintenance of fire prevention programs, educational programs and inspectional programs; apply related disciplines to fire prevention problems. (2-2-0) 3

FIP 3303 Fire Protection I: Upon completion of this course, students should be able to: state the duties and obligations of fire service, fire protection and safety personnel; identify general fire hazards and causes, fire protection principles; demonstrate skill in applying these principles in the elimination or reduction of the fire hazards and causes; compare current trends and federal legislation in fire protection to early fire protection developments. (3-0-0) 3

FIP 3304 Fire Management: Upon completion of this course, students should be able to: list and describe eight major elements of personnel management; list and describe the principles of supervision; describe the factors of motivation; list and evaluate the principles of discipline. (3-0-0) 3

FIP 3401 Plant Emergency Operations: Upon completion of this course, students should be able to: define in relation to the industrial facility the regulatory requirements as imposed by OSHA, insurance carriers, and other regulation agencies; develop a plan of interfacing with outside assisting emergency organizations; develop a procedure for organizing, staffing, and training a plant emergency brigade. (3-2-0) 4

***FIP 3404 Chemistry of Flammable Materials:** Upon completion of this course, students should be able to: list and describe theories of combustion and extinguishment; analyze flammable materials and describe the nature of extinguishing agents; list the properties of matter affecting fire behavior; discuss the use, storage and disposal of flammable solids, liquids, gases and dust, using the laws and principles of chemistry and physics as a basis for discussion. *Prerequisite: CEM 3300. (3-2-0) 4

FIP 3405 Flame Propagation and Material Rating: Upon completion of this course, students should be able to: explain the three basic elements which determine the fire hazards of a building; define the different types of interior finish to exclude trim and incidental finishes; calculate the flame spread behavior of floor covering systems to include cellulosic materials, carpet materials and certain floor tiles. *Note: Student must have Student Accident Insurance.* (2-4-0) 4

FIP 3406 Arson Investigation I: Upon completion of this course, students should be able to: compare and contrast the facts, truths, trends, and statistics pertaining to loss of life and property from accidental and incendiary fires; identify the effects of fire and its behavior, including the factors which influence the spread of fires, such as weather, heat transformed,

and spontaneous heating; categorize, list and document the fire scene and submit evidence for scientific examination. (3-2-0) 4

*FIP 3408 **Arson Investigation II:** Upon completion of this course, students should be able to: examine a fire area to determine point of origin; describe the legal ramifications of preserving the fire scene and protecting the corpus delecti; describe how to present testimony in the manner expected of an expert witness. *Prerequisite: FIP 3406. (3-2-0) 4

FIP 4304 Fire Protection Law: Upon completion of this course, students should be able to: list and discuss pertinent laws and ordinances and codes of fire protection and the responsibilities and powers of the individual or organizations concerning enforcement; discuss liability of fire protection personnel when making inspections, recommendations, fighting fires and other tasks; discuss specific court cases including tort, terms and contracts. (3-0-0) 3

FIP 4314 Methods of Teaching: Upon completion of this course, students should be able to: discuss purposes of fire service drills and training programs; discuss the development and operation of Charlotte-Mecklenburg training programs; list and describe facilities and necessary equipment for modern training; discuss the selection and training of instructional staff and appropriate methods of instruction. (3-0-0) 3

*FIP 4403 **Hydraulics for Fire Protection:** Upon completion of this course, students should be able to: describe the flow of fluids through fire hoses, nozzles, appliances, and measure fluid flow accurately using appropriate methods of determining quantities of water available through fire systems. *Prerequisite: MAT 3500. (3-2-0) 4

*FIP 4404 **Water Distribution Systems:** Upon completion of this course, students should be able to: identify and describe sources of water, water storage, measurement of fluid flow and methods of determining quantities of water available from a distribution system. *Prerequisite: MAT 3500. (3-2-0) 4

FIP 4405 Sprinkler and Standpipe Systems: Upon completion of this course, students should be able to: identify and describe the various types of sprinkler and standpipe systems; list and discuss system devices and their operations to include advantage of sprinkler system, codes governing installation, water supply requirements, testing, inspection, and maintenance. (3-2-0) 4

FIP 4414 Inspection Principles and Building Codes: Upon completion of this course, students should be able to: list fundamentals of fire inspection including standards, techniques of evaluation of hazards by degrees, and practical recommendations; inspect buildings and write reports on each building, to include maps and sketches of each building, location of hazards, and recommendations for safe practices and improvements. (3-0-3) 4

FIP 4423 Portable and Fixed Extinguishing Systems: Upon completion of this course, students should be able to: list and describe the various types of portable and fixed extinguishing systems, their operation, application, installation and maintenance; demonstrate skill in operating portable and fixed extinguishing systems. (3-2-0) 4

FIP 4424 Automatic Alarm Systems: Upon completion of this course, students should be able to: list and describe the types of standard and special fire alarm and fire detection systems to include discussion of their operations, installation requirements, testing, inspections, and maintenance. (3-2-0) 4

*FIP 4434 **Chemical and Radiation Hazards:** Upon completion of this course, students should be able to: list and describe the hazards encountered in chemical and petroleum industries; list and describe radiation hazards, effects of radiation on humans, exposure control, radiological instruments, operational and decontamination procedures; list and describe common uses of radioactive materials, their transportation and storage; demonstrate skills of chemical and radioactive inspections. *Prerequisite: FIP 3404. (3-2-0) 4

FIP 4444 Fire Fighting Strategy: Upon completion of this course, students should be able to: list and describe tactics and strategy in extinguishing fires; list and describe pre-fire plans, fire flow calculations, techniques of using available equipment and manpower, conflagrations, techniques of predicting fires and fuel analysis; demonstrate appropriate response to simulated crises. (3-2-0) 4

FIP 4454 Building Construction: Upon completion of this course, students should be able to: list and discuss building codes applicable to fire prevention; list and describe the principles and practices used in various types of building construction. (3-2-0) 4

*FIP 4464 **Hazardous Material Analysis and Emergency Planning:** Upon completion of this course, students should be able to: describe the various hazard survey principles and techniques for detecting the presence of hazardous materials in industrial/commercial occupancies; demonstrate the use of reference resources and identification systems for hazardous materials properties; develop a pre-plan from on-site visits of an oil/gasoline tank farm, railroad terminal yard, LPG tank storage farm, and a chemical plant. *Prerequisite: FIP 4434. (2-4-0) 4

Food Service

FSO 3300 Introduction to Food Service Management: Upon completion of this course, students should be able to: cite the sanitation rules of Charlotte and the state code of North Carolina; distinguish between a chain restaurant, corporation hotel, country club operation, cafeteria and coffee shop, recognize the proper chain of command; and explain the basic function of each department existing in an entire food service operation. (3-0) 3

FSO 3301 Nutrition: This course is designed to provide students with basic facts about foods and nutrition and to aid them in developing the ability to sort out and apply new developments in this field to food preparation. Upon completion of this course, students should be able to: explain the relationship of food to health and physical fitness; discuss food nutrients and their functions in the body; describe how the body utilizes food; explain the process of getting food from the producers to the consumer; and discuss the essentials of an adequate diet to maintain health. (3-0) 3

FSO 3305 Table Cookery: Upon completion of this course, students should be able to: demonstrate the necessary knowledge and skill to become a competent waiter, waitress, hostess or host; prepare the various dishes that are appropriate for table cookery, including flaming desserts and salads prepared at the table. (2-3) 3

FSO 3504 Food Preparation I: Upon completion of this course, the student should be able to perform the duties of a fry cook such as deep fat frying; preparing eggs and omelettes, fritters, all kinds of potatoes, au gratin dishes, spaghetti, special pancakes and crepes suzettes; cooking frozen vegetables, to

retain color, vitamins and minerals. After gaining a thorough knowledge of the station routine, a student is eligible to be a head fry cook or proceed to other stations. (2-9) 5

FSO 3505 Food Preparation II: Upon completion of this course, the student should be able to perform the duties of a broiler cook such as broil steaks, chops, chicken, fish, lobsters, ham, liver, sweetbreads, tomatoes, mushrooms, mixed grill, veal, kidneys, and chicken en brochette. In addition the student should be able to perform the duties required at a roasting station because, at times, both stations are combined. (2-9) 5

FSO 3506 Food Preparation III: Upon completion of this course, students should be able to: prepare the more complex hot soups (Consomme Royale, Lobster Bisque), a variety of cold soups (Vichyssoise, Borscht, Rose en Hiver), and be familiar with each soup garnish; prepare the standard (seafood crepe, stuffed and various mushrooms) and advanced appetizers (Escargot, Oysters Rockefeller); explain appropriate appetizers for various types of menus; demonstrate an understanding of the showmanship necessary to achieve a successful product; identify the different types of food service (Banquet, Menu, Buffet), and differentiate between them and explain what constitutes each. (2-9) 5

FSO 4304 Food and Labor Cost Controls: This course concerns food costs and skills necessary for setting food cost objectives. Upon completion of this course, students should be able to: define food costs; perform skills necessary for setting food cost objectives; explain the value of establishing standard portions; demonstrate knowledge of purchasing methods; discuss the importance of a weekly inventory; explain the importance of Food Issuing forms; explain the value of comparative buying. (3-0) 3

FSO 4407 Baking I: This is an introductory course in the principles of baking and the skills necessary to make bread, rolls and cakes. Upon completion of this course, students should be able to: demonstrate the use of correct measurements and the proper use of various baking tools and equipment related to baking; and bake French, white, whole wheat and rye bread. (2-6) 4

FSO 4408 Baking II: This is an advanced course in baking, stressing mixing methods and defining the function of each ingredient. Upon completion of this course, students should be able to: demonstrate the ability to handle and roll basic dough; and recognize the differences between the pastry, baking and ice cream units. (2-6) 4

FSO 4409 Baking III: Upon completion of this course, students should be able to: identify ingredients used in various icings, French and Danish pastries; explain the function of each ingredient; describe the methods of making different icings; demonstrate the use of large and small pastry bags; identify appropriate decorating tubes used for various decorations; prepare and use the correct ingredients to produce birthday, wedding and specialty cakes; and create flaming desserts. (2-6) 4

FSO 4414 Garde Manger I: Upon completion of this course, students should be able to: identify all basic salad greens and know how to clean, prepare and store them; identify and prepare the basic salad dressings; prepare meat, seafood, poultry, vegetable and pasta salads for menus and buffet service; and have a general knowledge of the function and responsibility of the Garde Manger department. (2-6) 4

FSO 4415 Garde Manger II: Upon completion of this course, students should be able to: apply the techniques of processing and dressing meats, including poultry and seafood; construct various sandwiches; identify ingredients used in numerous salad dressings; recognize color, flavor and texture combinations used in aspics and glazes for show pieces; carve simple ice and tallow pieces; identify ingredients that constitute tallow; create fancy mousses and aspics. (2-6) 4

FSO 4416 Garde Manger III: Upon completion of this course, students should be able to: prepare fancy salads, special sandwiches and a classic chaud froid showpiece; identify various nutritive values associated with fresh fruits and vegetables and explain how to maintain these nutrients during preparation and cooking; differentiate the responsibilities of the Garde Manger section. (2-6) 4

FSO 4419 Baking IV: Upon completion of this course, students should be able to: prepare onion rolls, soft rolls, French and rye bread; prepare royal, buttercream and boiled icings; make and work with gum paste; know and demonstrate use of appropriate decorator tubes; make flowers and borders; make and decorate birthday, wedding and specialty cakes. (2-6) 4

FSO 4426 Garde Manger IV: Upon completion of this course, students should be able to: plan, coordinate and execute a buffet successfully; demonstrate specific skills in set-up, garnishing and planning; set up a "working" pantry area with emphasis on traffic patterns, refrigeration and space limitations for a full-service restaurant; plan, coordinate and execute a cocktail party with emphasis on preparation of fancy hors d'oeuvre, glazing and set-up trays; create garnishes using correct color and food combinations; plan menus; supervise Garde Manger staff. (2-6) 4

FSO 4506 Food Preparation IV: Upon completion of this course, students should be able to: saute, fry, roast, braise, stew and broil meats, in addition to demonstrating how to carve different cuts of meat, poultry and fish; define the difference between roasting and braising and prepare items using both methods of cooking; recognize the different types of game and demonstrate the ability to prepare these; demonstrate the ability to use the necessary equipment used to carve; demonstrate knowledge of the fundamentals used in purchasing provisions and groceries. (2-9) 5

FSO 4208 Cooperative Education: This course is designed to aid students in applying the skills necessary for success in the food service industry by providing actual supervised work experience in the food service industry under the guidance of an Executive Chef. Upon completion of this course, students should be able to: perform successfully the objectives outlined in the training plan, including such skills as ability to operate fry, broiler and saute stations; set up a salad station; prepare salads; perform bakery shop operations; evaluate their own performance in the field; assess requirements and responsibilities for successful employment and evaluate their own capacity to comply with such demands. (0-20) 2

French

FRE 1300 Travel French: This course provides an oral approach to comprehending and communicating in French. Upon completion of this course, students should be able to use basic communication in terminals, shops, restaurants, hotels and other places. Tapes, filmstrips, movies and extensive conversation in the classroom reinforce instruction. *(Elective credit only. Does not satisfy humanities requirement.)* (3-0) 3

FRE 1600 Elementary French I: Upon completion of this course, students will have a knowledge of some basic elements of French in conversation, reading and writing. Filmstrips and tapes are used in classroom and laboratory instruction. *(Does not satisfy humanities requirement.)* (5-2) 6

***FRE 1601 Elementary French II:** This course is a continuation of FRE 1600 in basic elements of conversation, reading and writing. *Prerequisite: FRE 1600 within previous two quarters or consent of department head. *(Does not satisfy humanities requirement.)* (5-2) 6

***FRE 2320 Special Topics:** This is an advanced course in which students and the instructor select topics for independent study. Class meetings for oral reports and discussion. *Prerequisite: FRE 2600 within previous two quarters or consent of department head. (3-0) 3

***FRE 2600 Intermediate French I:** Upon completion of this course, students will have had an intensive review of basic grammar and vocabulary combined with study of idiomatic forms and grammatical structures in selected readings. *Prerequisite: FRE 1601 or two high school units within two previous quarters or consent of department head. (5-2) 6

***FRE 2601 Intermediate French II:** Upon completion of this course, students will have completed their review of grammar along with readings in French with emphasis on people and events that have determined the destiny of France from the beginnings to the present. *Prerequisite: FRE 2600 within previous two quarters or consent of department head. *(FRE 2600 and FRE 2601 combined will satisfy humanities requirement.)* (5-2) 6

General Educational Development

GED 6001 Upon completion of this individualized set of courses in mathematics, English grammar, literature, science and social studies, students will be prepared to take and pass the G.E.D. Examination.

General Studies

GEN 1140 Field Biology: This course is specifically designed for the general interest Weekend College student. Upon satisfactory completion of the course, students will be able to write a description, using field notes, of the major flora and fauna of the specific field location being studied. (0-22) 1

GEN 1141 Introduction to Nature Photography: An introduction to the basic principles of nature photography with emphasis on various types of cameras, lenses and films, indicating the limitations of each. Also an introduction to the techniques of photography from blinds and tips on how to photograph anything from wild flowers to birds. (0-22) 1

GEN 1142 Field Biology/Ecology of North Carolina: This course consists of three 7-1/3 hour field sessions: one each to Coastal region/seashore, Piedmont region, and mountains. Each trip provides in the field instruction about the area visited. Highlights of the ecology, geology, flora and fauna of each area are observed and discussed. The course uses three different instructors, each with experience and expertise in the specific area. Students will provide their own transportation to and from field locations. (0-22) 1

GEN 1143 Edible Wild Plants: This course consists of 5 hours of lecture and 12 hours of lab (field trips). The class sessions utilize slide demonstrations to acquaint students with edible wild plants of the area. Information on the preparation of these plants will be provided. The field sessions will involve identification of edible wild plants. Students will provide their own transportation to and from field locations. (5-12) 1

GEN 1144 Ecology by Canoe: A course of general interest designed to meet the needs of the Weekend College student. The course is made up of 3 all-day (7-1/3 hours) field trips by canoe. Students will learn about the flora and fauna of three different geographical regions and streams of North Carolina: i.e., Swamp, Piedmont and Mountain. Little or no canoeing experience is necessary—flatwater streams are selected. Students will provide their own transportation to and from field locations. (0-22) 1

GEN 1148 Field Identification of Insects: An introduction to insect identification using taxonomic keys down to the major orders of insects. Characteristics of insects will be compared to other arthropods and other animal phyla. Also the importance of insects to humanity and the environment will be stressed along with control methods. (0-22) 1

GEN 1149 Field Ornithology: An introduction to the identification and study of birds in the field. Upon satisfactory completion of this course, students should be able to identify several kinds of birds on sight and demonstrate knowledge of special adaptations, kinds of food, and life histories of selected species. (0-22) 1

GEN 1230 Writing to Sell: This course focuses upon the technique of researching, writing and selling nonfiction prose. "Slanting" or adapting articles to specific magazines, newspapers, and other such publications is emphasized. The object of the course is to prepare written materials for marketing. (2-0) 2

GEN 1331 Introduction to North Carolina Folklore: Upon completion, students should be able to explain the importance of both oral and material culture of North Carolina and the South. They should recognize the importance of folk groups, historic themes, narrative genres of folk tales, customary folklore (superstition, festivals, etc.), and material folk traditions (arts and crafts, etc.). (3-0) 3

GEN 1512 Divorce: A course designed for the formerly married and those in the process of terminating marriage. Class sessions will utilize guest speakers drawn from the College and the community. Through paper and pencil testing, students will demonstrate more positive attitudes toward divorce, a greater knowledge of the state and national trends of divorce, and the impact of divorce on children. Students will demonstrate a greater awareness of the local agencies and resources which can assist with the problems associated with divorce, and the consumer rights and credit rights of a formerly married person. Each student will develop an occupational and/or career advancement plan for future use. (5-0) 5

Geography—Physical

GEO 1614 Introduction to Physical Geography: A study of the basic physical elements of geography aimed at understanding the physical environment. Upon completion of this course, students should be able to demonstrate a basic understanding of the earth's geographic grid system, earth-sun relations, basic concepts of cartography, meteorology, hydrology, climatology and biogeography. (5-2) 6

Geography—World

GPY 1500 Introduction to World Geography: Upon successful completion of this course, students will be able to: describe the major types of physical environment; explain how the physical environment influences economic development, trade, and communications patterns; explain how these human activities affect each other and the physical environment; and identify political boundaries and resource concentrations, major terrain features, and other important elements of the human and physical environments. (5-0) 5

Geology

GEL 1300 Introductory Physical Geology: An introductory course in physical geology based upon "The Earth Explored," a series of videotapes produced by KRMA-TV, Denver, Colorado, and the British Broadcasting Corporation. Through the series of fourteen videotapes, students are taken to locations around the world and have explained the basic principles of physical geology. (3-0) 3

GEL 1604 Physical Geology: An introductory course with emphasis on geology as an environmental discipline. Upon completion of this course, students should be able to demonstrate knowledge in the following areas: common minerals and rocks, earth processes, development of surface features, and geologic resources. (5-2) 6

GEL 2605 Historical Geology: A course in the historical sequence of the earth's history. Upon completion of this course, students should be able to demonstrate knowledge in these areas: recognition of major fossils and associated rock strata; appreciation of the age of many geological formations and how historical geology aids in finding natural resources. (5-2) 6

German

GER 1600 Elementary German I: This course emphasizes basic elements of German in conversation, reading and writing for beginning students, with laboratory tapes to reinforce classroom instruction. *(Does not satisfy humanities requirement.)* (5-2) 6

***GER 1601 Elementary German II:** This course is a continuation of GER 1600 in basic elements of conversation, reading and writing. *Prerequisite: GER 1600 within previous two quarters, or departmental consent. *(Does not satisfy humanities requirement.)* (5-2) 6

***GER 2600 Intermediate German I:** This course provides an intensive review of basic grammar and vocabulary combined with study of idiomatic forms and grammatical structures in selected readings. *Prerequisite: GER 1601 or two high school units within previous two quarters, or consent of department head. (5-2) 6

***GER 2601 Intermediate German II:** This course is a continuation of GER 2600. Reading of selections from German literature are combined with oral and written work in class. *Prerequisite: GER 2600 within previous two quarters, or consent of department head. *(GER 2600 and GER 2601 combined will satisfy humanities requirement.)* (5-2) 6

Graphic Arts (Printing)

PRN 4311 Printing Sales: Upon completion of this course, students should be able to: plan and prepare for a sales interview with a client; describe proper procedures in dealing with a client and associates in the printing industry; describe the system of selling by objectives; describe the importance of physical fitness and proper grooming; write effective business letters; describe the proper use of audio-visuals in selling; demonstrate a familiarity with the printing processes, printing supplies, trade customs and ethics; describe proper procedures for credit collections. (3-0) 3

***PRN 4337 Color Separation Techniques and Theory:** Upon completion of this course, students should be able to: describe basic color theory with regard to additive and subtractive color; produce a set of process color separations by a minimum of two methods, one set to be made with the use of silver masking; explain the procedure to color correct by wet and dry dot etching. *Prerequisite: PRN 5409 is recommended. (2-2) 3

***PRN 5207 Cooperative Lab:** Upon completion of this course, students should be able to apply the skills learned in the graphic arts classroom and lab to actual working situations in the graphic arts industry. *Prerequisite: Permission of the program director and completion of a special application to take the course. (2-2) 3

***PRN 5272 Printing Applications I—Part B:** A continuation of PRN 5371. *Prerequisite or corequisite: PRN 5371. (0-6) 2

***PRN 5273 Printing Applications I—Part C:** A continuation of PRN 5272. *Prerequisite or corequisite: PRN 5272. (0-6) 2

***PRN 5282 Printing Applications II—Part B:** A continuation of PRN 5381. *Prerequisite or corequisite: PRN 5381. (0-6) 2

***PRN 5283 Printing Applications II—Part C:** A continuation of PRN 5282. *Prerequisite or corequisite: PRN 5282. (0-6) 2

PRN 5301 Printing Management: Upon completion of this course, students should be able to: describe the structure of the management levels in a company; discuss management skills and leadership traits of first-line supervisors or small shop managers; describe production control, proper purchasing of supplies, quality control and material handling. (3-0) 3

***PRN 5303 Printing Estimating:** Upon completion of this course, students should be able to: compute paper and ink costs; copyfit type for a job; compute cost of producing a negative, plate, printing and bindery for a given job. *Prerequisites: PRN 5315, PRN 5425 and PRN 5435 or permission of program director. (3-0) 3

PRN 5310 Paper and Ink: Upon completion of this course, students should be able to: state the characteristics of the major classifications of paper and other substrates; describe how paper and ink are manufactured and distributed; describe and give solutions to paper and ink related problems on the press; select paper and ink properly matched to the customer's specifications. (3-0) 3

PRN 5313 Typesetting I: Upon completion of this course, students should be able to: describe the requirements of good composition; trace the development of typesetting; operate a modern phototypesetter and produce quality photo type; perform maintenance operations on a modern phototypesetter; produce quality photo-display type; describe future trends in typesetting. (2-2) 3

PRN 5314 Process Camera I: Upon completion of this course, students should be able to: describe the purpose and function of photomechanical photography and its equipment and materials; set up and operate a functional darkroom shooting line and halftone copy; use a densitometer, the PMT process and process photography filters. (2-2) 3

***PRN 5315 Process Camera II:** (A continuation of PRN 5314). Upon completion of this course, students should be able to: shoot line and halftone copy of a more difficult nature; do special effects photography including duotones, dropout halftones, set-ins and mezzotints; screen color separations properly. *Prerequisite: PRN 5314. (2-2) 3

PRN 5316 Production Screen Printing: Upon completion of this course, students should be able to: use correctly all basic materials of screen printing; prepare hand-cut film stencils, photo direct and photo indirect stencils; print on at least three different surfaces; describe the differences in the technique and materials used in printing on different materials; describe the different uses of screen printing; describe the use of machines and automated equipment in industrial screen printing. (2-2) 3

***PRN 5317 Typesetting II:** At the completion of this course, students should be able to: plan, mark up and produce a job with varied format; copyfit and set copy to specifications, proofread and make corrections. *Prerequisite: PRN 5313. (2-2) 3

***PRN 5364 Fundamentals of Offset Printing:** This course is designed to give Commercial Art students a basic understanding of offset lithography. At the completion of this course, students should have: produced line and halftone negatives; stripped combination flats; made plates; printed a simple self-promotional folder. *Prerequisites: VCO 4304, VCO 4305 and VCO 4415. (2-2) 3

PRN 5365 Stripping I and Platemaking: Upon completion of this course, students should be able to: describe and demonstrate various methods of image assembly; strip line and halftone combinations; make dylux and color key proofs; strip multi-color work with two, three and four overlapping screen tints; step and repeat an image; expose and process various types of offset plates. (2-2) 3

PRN 5369 Introduction to Graphic Arts: Upon completion of this course, students should be able to: list and describe the major printing processes; describe the phases a piece of printing goes through in the production process; describe the duties performed by those employed at various stages of production, management and sales; describe the graphic arts industry in the local area. (3-0) 3

***PRN 5371 Printing Applications—Part A:** (A course for students unable to make the total time requirements for PRN 5700 in one quarter). At the completion of this course, PRN 5372 and PRN 5373, students should have met all the requirements for PRN 5700. *Prerequisite: Same as PRN 5700. (2-3) 3

***PRN 5381 Printing Applications II—Part A:** (A course for students unable to make the total time requirements for PRN 5704 in one quarter). At the completion of this course, PRN 5282, and PRN 5283, students should have met all the requirements for PRN 5704. *Prerequisite: Same as PRN 5704. (2-3) 3

***PRN 5390 Individual Study:** This course provides students with the opportunity to develop a special program of studies to fit a particular need not met by other courses during the second year of study. Enrollment provides access to the resources and facilities of the entire institution. Each student works under the supervision of a sponsoring staff member. *Prerequisite: Approval of the sponsor and the program director is required along with an application to take the course. (3-0) 3

PRN 5401 Copy Preparation I: Upon completion of this course, students should be able to: produce camera ready paste-up; use the common tools and materials found in copy preparation; produce simple, and complex mechanicals using key line art work and overlays; describe the relationship of copy preparation with the rest of the printing process. (2-4) 4

PRN 5402 Basic Calculations for Printers: Upon completion of this course, students should be able to: apply the principles of addition, subtraction, multiplication and division to problems in the graphic arts field; use ratio and proportion to describe chemical mixtures in the lab; understand scale measurement; read a ruler accurately; manipulate fractional and decimal numbers; determine mathematically the most economical cut of paper stock; perform area and volume calculations; use simple algebraic equations to solve dimensional problems; have a working knowledge of pica and point measurement; discuss measurement using the metric system as well as the English system. (4-0) 4

***PRN 5403 Copy Preparation II:** (A continuation of PRN 5401.) Upon completion of this course, students should be able to complete paste-up mechanicals and camera ready art of a more difficult nature. *Prerequisite: PRN 5401. (2-4) 4

***PRN 5409 Color Reproduction:** Upon completion of this course, students should be able to: explain color theory; describe various methods used to make separations, identifying strengths and weaknesses; list and describe the major proofing methods used for process color; produce a simple eye pleasing color separation. *Prerequisites: PRN 5435, PRN 5315 and PRN 5425. (3-2) 4

PRN 5424 Offset Press I and Bindery: Upon completion of this course, students should be able to: describe and perform procedures in press make-ready including determining correct measurements for packing, mounting of plates and blankets; set the feeder, delivery, dampener rollers, ink, fountain solution, and pH; operate duplicator to produce a satisfactory printed piece; identify and describe the various types of bindery operations including book bindery, finishing operations in packaging, padding and other general bindery procedures. (2-4) 4

***PRN 5425 Offset Press II:** (A continuation of PRN 5424). Upon completion of this course, students should be able to: operate a full size offset press; identify and correct problems during press run; control the register of color printing. *Prerequisite: PRN 5424. (2-4) 4

***PRN 5435 Offset Stripping II:** (A continuation of PRN 5424). Upon completion of this course, students should be able to: make up flats for larger offset presses; make composite negatives; strip duotones and process color; work with spreads and chokes; identify various methods of stripping a printed piece to produce the desired finished product; work with more involved and difficult stripping projects. *Prerequisite: PRN 5365. (2-4) 4

***PRN 5700 Printing Applications I:** Upon completion of this course, students should have attained additional skills in the following areas: layout and paste-up of mechanical art; planning a detailed method of production; shooting line, halftone and special effects copy; stripping; making plates; operating press

and bindery equipment. Students will produce commercial quality printed pieces. *Prerequisites: PRN 5313, PRN 5314, PRN 5365, PRN 5401, PRN 5424, and the permission of the program director. (2-15) 7

*PRN 5704 **Printing Applications II:** (A continuation of PRN 5700 Printing Applications I). Upon completion of this course, students will have completed tasks of a more complex nature in the following areas; layout and paste-up of mechanical art; planning a detailed method of production; shooting line, halftone, and special effects copy; stripping, making plates, operating press and bindery equipment. Students will produce commercial quality printed pieces. *Prerequisite: PRN 5700 and permission of the program director. (2-15) 7

Health Education

HED 1111 Special Health Problems: Selected health problems are chosen for study. Students are presented a subject area and should be able to identify and describe possible solutions to these problems. (1-0) 1

HED 1201 Special Health Problems: Selected health problems are chosen for study. Students are presented a subject area and should be able to identify and describe possible solutions to these problems. (2-0) 2

HED 1203 Cardiopulmonary Resuscitation (CPR): Students are instructed in Emergency First Aid and CPR procedures. Upon completion of this course, students should be able to give care to the injured and peform emergency procedures when cardiac arrest occurs. (2-0) 2

HED 1204 Standard First Aid: Upon completion of this course, students should be able to demonstrate skills in providing emergency care for the sick and injured until medical help can be obtained. (1-2) 2

***HED 1205 Standard First Aid Instructor:** Upon completion of this course, students should be able to demonstrate skills in writing lesson plans and presenting them in class situations. *Prerequisite: HED 1204. (1-2) 2

***HED 1206 Advanced First Aid and Emergency Care:** Upon completion of this course, students should be able to perform advanced techniques of first aid skills in caring for the sick and injured. *Prerequisite: HED 1204. (1-2) 2

***HED 1207 CPR Instructor:** Upon completion of this course students should be able to prepare lesson plans for teaching cardiopulmonary resuscitation and present these plans in class. They should be able to administer tests of basic CPR skills. *Prerequisite: HED 1203. (2-0) 2

HED 1208 Personal Fitness Analysis: Upon completion of this course, students should be able to assess their health and fitness status by the use of laboratory tests such as calculating body fatness, determining aerobic fitness and flexibility. (1-2) 2

HED 1300 Introduction to Health Education: Upon completion of this course, students should be able to define the basic concepts of health and relate these to everyday life, evaluate health information and identify current health issues. (3-0) 3

HED 1301 Special Health Problems: Selected health problems are chosen for study. Students are presented a subject area and should be able to identify and describe solutions to these problems. (3-0) 3

HED 1310 Your Health—Your Choice: A course containing 30 video modules each concentrating on specific health related topics. Upon completion of course, students should be able to identify and recognize problems and solutions to areas such as diseases of present day civilization, nutrition, drug abuse, aging, consumer health and other pertinent topics. (2-2) 3

HED 2204 Prevention and Treatment of Injuries in Recreation: Upon completion of this course, students will be able to identify areas of athletic injuries, be able to give first aid for these injuries and describe ways to prevent recurrence. (1-2) 2

Health, Physical Education And Recreation

HPE 1100 Individual Activity: Selected physical education topics are chosen for study. Upon completion of this course, students should be able to demonstrate skill in these topic areas. (0-3) 1

HPE 1103 Water Skiing: Upon completion of this course, students should be able to care for equipment, identify safety procedures, and develop fundamental skills of water skiing. Prerequisite: Demonstrated swimming proficiency. [Self-Supporting] (0-3) 1

HPE 1104 Fencing—Beginning: Upon completion of this course, students should be able to perform elementary foil technique and demonstrate the basics of competitive fencing. (0-3) 1

***HPE 1105 Fencing—Intermediate:** Upon completion of this course, students should be able to perform foil techniques such as the balastra, the fleche, the croise, taking the blade and competitive fencing. *Prerequisite: HPE 1104 or equivalent. [Self-supporting] (0-3) 1

***HPE 1106 Fencing—Advanced:** Upon completion of this course, students should be able to execute elementary sabre techniques (the on-guard position, the lunge, the cut at head, crest and flank); various parries; more advanced foil techniques; and engage in advanced competitive fencing. *Prerequisite: HPE 1105 or equivalent. [Self-supporting] (0-3) 1

HPE 1107 Self-Defense and Physical Conditioning—Beginning: Upon completion of this course, students should be able to demonstrate stances, blocks, punches, walking and kicks used in self-defense. (0-3) 1

***HPE 1108 Self-Defense and Physical Conditioning—Intermediate:** Upon completion of this course, students should be able to execute pre-arranging and will demonstrate first forms and katas. *Prerequisite: HPE 1107 or equivalent. (0-3) 1

***HPE 1109 Self-Defense and Physical Conditioning—Advanced:** Upon completion of this course, students should be able to perform skills learned in the intermediate course and will perform advanced new techniques and skills in free fighting and defense against weapons. *Prerequisite: HPE 1108 or equivalent. (0-3) 1

HPE 1114 Snow Skiing—Beginning: Upon completion of this course, students should be able to do parallel turns, christies, basic jump and introductory wedelin; identify fundamentals of skiing, safety and etiquette. [Self-Supporting] (0-3) 1

***HPE 1115 Snow Skiing—Intermediate:** Upon completion o f this course, students should progress to longer skis, concentrating on improving traverse and side slip; expand on angulation, pole plant and unweighting, and engage in an intermediate exercise program in order to handle more

advanced terrain. *Prerequisite: HPE 1114 or equivalent. [Self-Supporting] (0-3) 1

HPE 1117 Ice Skating—Beginning. Upon completion of this course, students should be able to perform basic ice skating maneuvers such as forward and backing, stroking one-foot glide, cross overs, arabesque, and backward wiggle. (0-3) 1

HPE 1123 Physical Fitness—Beginning: Upon completion of this course, students should be able to identify positive health practices in physical activity. diet, rest and relaxation; show evidence of improved cardiovascular endurance, upper and lower body strength, and flexibility; plan a training program which will result in the achievement and/or maintenance of a high level of health fitness. (0-3) 1

***HPE 1124 Physical Fitness—Intermediate:** Upon completion of this course, students should be able to take each component of fitness (strength, cardiovascular and muscular endurance and flexibility) and perform specific exercises related to each. Students will be asked to continue development of a personal fitness program. *Prerequisite: HPE 1123 or equivalent. (0-3) 1

HPE 1125 Physical Fitness—Advanced: Upon completion of this course, students should be able to identify and test themselves for cardiovascular efficiency; plan and execute a personal fitness program; specify the adaptations of the body as a result of long-term exercise. *Prerequisite: HPE 1124 or equivalent. (0-3) 1

HPE 1126 Social Dance—Beginning: Upon completion of this course, students should be able to demonstrate specific dance skills and perform the following dances: Fox Trot, Waltz, Lindy, Cha-Cha, and Rumba. [Self-Supporting] (0-3) 1

***HPE 1127 Social Dance—Advanced Beginner:** Upon completion of this course, students should be able to perform more difficult steps and types of dance including the Tango, Samba, Polka and the Discotheque. *Prerequisite HPE 1126 or equivalent. [Self-Supporting] (0-3) 1

***HPE 1128 Social Dance—Intermediate:** Upon completion of this course, students should be able to add more difficult steps to the dances learned in HPE 1127. They will learn to perform basic steps in the Charleston. Prerequisite: HPE 1127 or equivalent. [Self-Supporting] (0-3) 1

HPE 1134 Basic Course of American Square Dancing: Upon completion of this course, students should be able to perform the first 50 of the fundamental movements of square dancing. [Self-Supporting] (0-3) 1

HPE 1138 Clogging—Beginning: Upon completion of this course, students should be able to demonstrate the basic techniques of clogging, dance routines used by clogging teams, and should demonstrate improved rhythm. [Self-Supporting] (0-3) 1

***HPE 1139 Intermediate Clogging:** Upon completion of this course, students should be able to perform all basic steps from Beginning Clogging; perform intermediate and advanced steps and develop and exhibit simple precision routines; perform intermediate Square Dance Routines; design their own routines from steps presented. *Prerequisite: HPE 1138 or equivalent. [Self-Supporting] (0-3) 1

HPE 1140 Self Protection for Women: Upon completion of this course, students should be able to identify alternatives for women to use in case of personal attack; recognize and avoid danger in the home, car and office. (0-3) 1

HPE 1141 Jogging: Upon completion of this course, students should develop a short-term running/jogging program realistic for the individual; demonstrate improved stamina; demonstrate each of the basic six stretching and conditioning exercises for the prevention of injury. (0-3) 1

HPE 1147 Tennis—Beginning: Upon completion of this course, students should be able to: demonstrate elementary skills for ground strokes, serve, volley, smash and lob; to identify rules and strategy for singles and doubles. (0-3) 1

***HPE 1148 Tennis—Intermediate:** Upon completion of this course, students should be able to demonstrate playing skill, perform specific shots and game strategies. *Prerequisite HPE 1147 or equivalent. [Self-Supporting] (0-3) 1

***HPE 1149 Tennis—Advanced:** Upon completion of this course, students should be able to perform advanced shots, spins, pace and strategy. *Prerequisite HPE 1148 or equivalent. [Self-Supporting] (0-3) 1

HPE 1150 Exercise for the Handicapped: Upon completion of this course, students should be able to increase their level of fitness and demonstrate specific exercises relating to their individual needs. (0-3) 1

HPE 1154 Tap Dancing—Beginning: Upon completion of this course, students should be able to perform elemental constructions, motions and patterns in tap dancing. [Self-Supporting] (0-3) 1

HPE 1157 Jazz Dance—Beginning: Upon completion of this course, students will perform Jazz Dance art forms which connect to other art forms through observation, participation and commentary. [Self-Supporting] (0-3) 1

***HPE 1158 Jazz Dance—Intermediate:** Upon completion of this course, students should be able to demonstrate principles of jazz dance; perform self-choreography. *Prerequisite: HPE 1157 or equivalent. [Self-Supporting] (0-3) 1

***HPE 1159 Jazz Dance—Advanced:** Upon completion of this course, students should prepare independent programs for evaluation. Field trips will be scheduled to encourage civic awareness of dance. *Prerequisite: HPE 1158 or equivalent. [Self-Supporting] (0-3) 1

HPE 1164 Yoga—Beginning: Upon completion of this course, students should be able to demonstrate the basic principles of Yoga, including physical postures, proper breathing techniques, attitudes of positive thinking and confident self-awareness, and techniques to improve relaxation and mental concentration. (0-3) 1

***HPE 1165 Yoga—Intermediate:** Upon completion of this course, students should be able to demonstrate more detail on physical postures, breathing, relaxation and mental concentration. *Prerequisite: HPE 1164 or equivalent. [Self-Supporting] (0-3) 1

***HPE 1166 Yoga—Advanced:** Upon completion of this course, students should be able to do advanced types of breathing and concentration using sounds, and demonstrate difficult physical postures. *Prerequisite: HPE 1165 or equivalent. [Self-Supporting] (0-3) 1

HPE 1170 Aerobics: Upon completion of this course, students should be able to demonstrate exercises for physical conditioning by use of movement with music. Students will participate in vigorous exercise for cardiovascular endurance and calisthenic exercise for toning and firming muscles. (0-3) 1

HPE 1174 Rock Climbing: Upon completion of this course, students should be able to: explain the proper use of all basic rock climbing equipment; demonstrate all safety practices and procedures including belaying and knots; and demonstrate good technique in a basic top-rope climb and rappel of moderate difficulty. (0-3) 1

HPE 1175 Techniques of Lead Climbing: Upon completion of this course, students should be able to: demonstrate strong and skillful technique in top-rope climbs and rappels of advanced difficulty; demonstrate secure placement of pieces of protection; explain and demonstrate all safety practices for advanced top-rope rock climbing. [Self-Supporting] (0-3) 1

HPE 1176 Introduction to Backpacking: Upon completion of this course, students should be able to: identify the differences between high quality and poor quality backpacking equipment; identify proper conservation and ecological practices while in the woods; plan the meals for an overnight backpacking trip; demonstrate proper use of maps and compass. (0-3) 1

HPE 1177 Wilderness Skills: Upon completion of this course, students should be able to: plan and conduct an overnight backpacking trip including selection of locations, trails, evacuation routes and meals; administer basic mountain first aid skills; select quality outdoor equipment for their personal use wisely. [Self-Supporting] (0-3) 1

HPE 1178 Horseback Riding—Beginning: Upon completion of this course students should be able to demonstrate the fundamental skills of walking, trotting, cantering, jumping and etiquette of riding. (0-3) 1

HPE 1180 Orienteering: Upon completion of this course, students should be able to: define various types of orienteering; recognize and draw at least 15 topographic map symbols; negotiate a cross-country orienteering course 3-5 km long in a specified time period. (0-3) 1

HPE 1184 Swimming—Beginner: Upon successful completion of this course, students should be able to demonstrate back float, crawl stroke 20 yards, and safety skills. (0-3) 1

***HPE 1185 Swimming—Advanced Beginner:** Upon completion of this course, students should be able to demonstrate treading water, survival floating, elementary backstroke and crawl stroke. *Prerequisite: HPE 1184 or equivalent. (0-3) 1

***HPE 1186 Swimming—Intermediate:** Upon completion of this course, students should be able to: demonstrate four basic strokes—breast stroke, side stroke, crawl stroke and back crawl; demonstrate scissors kick, breaststroke kick. *Prerequisite HPE 1185 or equivalent. (0-3) 1

***HPE 1187 Swimming—Swimmer:** Upon completion of this course, students should be able to: swim the breast stroke—100 yards; side stroke—100 yards; crawl stroke—100 yards; back crawl—100 yards; and swim 10 minutes. *Prerequisite: HPE 1186. (0-3) 1

***HPE 1188 Swimming—Lifesaving:** Upon completion of this course, students should be able to demonstrate front and rear approaches, cross chest carry, and resuscitation. *Prerequisite: HPE 1186. (0-3) 1

***HPE 1189 Water Safety Instructor:** Upon completion of this course, students should be able to demonstrate beginner skills, swimming strokes, and lifesaving skills. *Prerequisite: HPE 1188. (0-3) 1

HPE 1190 Introduction to Golf I: Upon completion of this course, students should be able to demonstrate the grip, stance, body posture; use of the putter, 9 and 7 irons. (0-3) 1

HPE 1191 Introduction to Golf II: Upon completion of this course, students should be able to demonstrate the use of the mid- and long-irons and woods. They should be able to identify game rules and etiquette, and put skills to use on a Par 3 course. (0-3) 1

HPE 1193 Slimnastics—Beginning: Upon completion of this course, students should be able to identify basic components of exercise, personal exercise needs, precautions and benefits of an exercise program. (0-3) 1

***HPE 1194 Slimnastics—Intermediate:** Upon completion of this course, students should be able to: demonstrate measured change in endurance, flexibility, and strength; design a personal exercise program. (0-3) 1

***HPE 1195 Slimnastics—Advanced:** Upon completion of this course, students should be able to: identify and perform specific exercises; recognizie motivating factors in beginning and maintaining an exercise program; demonstrate continued advancement in components of exercise. *Prerequisite: HPE 1194 or equivalent. (0-3) 1

HPE 1196 Gymnastics—Beginning: Upon completion of this course, students should be able to: discuss gymnastic safety procedures; demonstrate a stretching and warm-up session for selected gymnastic apparatus; demonstrate basic moves in floor exercise, trampoline, unevens, parallel bars, beam and rings. (0-3) 1

HPE 1197 Gymnastics—Intermediate: Upon completion of this course, students should be able to: discuss and demonstrate spotting technique for beginning and intermediate skills on all pieces of equipment; demonstrate a beginning to intermediate level routine on selected pieces of apparatus; discuss the elements of a routine. (0-3) 1

HPE 1198 Bowling—Begining: Upon completion of this course, students should be able to identify skills, rules and strategy. (0-3) 1

HPE 1200 Creative Arts in Recreation: Upon successful completion of this course, students should be able to plan music and dance programs for various ages in a recreational setting; describe how to utilize basic drama skills in elementary dance and dramatic activities. * (1-3) 2

HPE 1214 Water Activities: Upon completion of this course, students should be able to: demonstrate skill in specific aquatic and small craft activities; identify elements of a camp waterfront area and a community "learn to swim" program; identify safety precautions in water activities; list the principles of organizing an aquatic program and its operation and maintenance; managing indoor and outdoor facilities (1-3) 2

HPE 1215 Lifeguard Training: Upon completion of this course, students should be able to identify hazards associated with aquatic facilities; recognize a person in a distress situation and effectively rescue that person; operate a pool filter system and direct a waterfront. (1-3) 2

HPE 1404 Introduction to Recreation Service: Upon completion of this course, students should be able: to identify the

NOTE: Successfully completed HPE courses may not be repeated without division head approval.
SELF-SUPPORTING: Credit will be given for successful completion of a self-supporting course. However, no additional credit will be given for repating the same course.

types of public and private agencies offering recreational services; describe the effects leisure time has upon society and the individual; describe the economic importance of recreation; identify the current concepts of recreation present and future trends. (3-3) 4

HPE 1504 Relays, Games and Team Sports: Upon completion of this course, students should be able to: identify the six types of relays; demonstrate and teach skills involved in self-testing activities, locomotor skills, team sports, relays involving equipment, obstacle relays and novelty relays; demonstrate and teach skills involved in specific team sports. (3-6) 5

HPE 2100 Bicycling: Upon completion of this course, students should be able to: select a bicycle suitable to their size and needs; repair and maintain a bicycle in its entirety; state the legal rights of a bicyclist; maneuver a bicycle safely around obstacles; ride a bicycle safely in traffic; know what equipment is necessary for a safe bicycle tour. (0-3) 1

***HPE 2112 Canoeing—Basic:** Upon completion of this course, students should be able to: demonstrate safe handling skills, self-rescue skills, and ways to apply the basic skills. They should be able to name the parts of a canoe and be able to perform the following strokes: bow, sculling, reverse sculling, sweep, reverse sweep and J. *Prerequisite: HPE 1184 or equivalent. (0-3) 1

***HPE 2113 Canoeing—Rivers:** Upon completion of this course, students should be able to perform the pry, draw, cross draw, rudder, backwater, and ferrying strokes on Class I rivers. *Prerequisite: HPE 2112. (0-3) 1

***HPE 2114 Canoeing—Basic White Water:** Upon completion of this course, students should be able to demonstrate successful negotiation of basic Class II and III white water rivers, and be able to identify safety rules, select proper equipment, and perform specific strokes. *Prerequisite: HPE 2113. (0-3) 1

***HPE 2115 Introduction to Kayaking:** Upon completion of this course, students should be able to: demonstrate various skills such as forward and reverse stroke, forward and reverse sweep and Eskimo roll; perform self-rescue and demonstrate safe practices in a kayak. *Prerequisite: Swimming proficiency. (0-3) 1

***HPE 2116 Whitewater Kayaking:** Upon completion of this course, students should be able to execute a river roll, safely negotiate class II and some class III rapids; perform self-rescue in class II rapids; identify river obstructions. *Prerequisite: HPE 2115 or equivalent. (0-3) 1

HPE 2200 Sports Officiating: Upon completion of this course, students should be able to: identify responsibilities of officiating; identify rules of the game; demonstrate good mechanics of officiating; demonstrate alertness, good judgment and decisiveness in calls; demonstrate poise; demonstrate consistency and good reaction time in calls. (1-3) 2

HPE 2314 Lifetime Activities: Upon completion of this course, students should be able to: list rules of specific individual activities such as archery, golf and tennis; demonstrate all skills involved in the activities; set up and organize a program in community involving individual activities; demonstrate techniques of teaching skills to others; evaluate effectiveness of program organized. (2-3) 3

HPE 2315 Recreational Scheduling: Upon completion of this course, students should be able to: set up specific types of tournament competitions; design and present an original special event project; demonstrate skill in organizing specific tournaments. (2-3) 3

HPE 2325 Introduction to Outdoor Recreation: Upon completion of this course, students should be able to: identify outdoor recreation resources; participate in on-site visits, and set up campsites; design a typical five-day program for a particular population group; be able to utilize specific backpacking techniques. (2-3) 3

HPE 2424 Program Planning and Organization: After completing this course, students should be able to: plan and organize a recreation program; identify those factors to consider in program planning—example: age, sex, skill; select appropriate facilities and equipment for program; prepare records and reports associated with program; demonstrate evaluation methods for program plan. (3-3) 4

HPE 2434 Recreation and Special Populations: Upon completion of this course, students should be able to: identify recreation services already available to special populations; list principles of recreation programming; design a plan for selected groups. (3-3) 4

HPE 2445 Principles of Physical Fitness: Upon completion of this course, students should be able to: administer and interpret specific fitness tests; define components of fitness; write and organize a body mechanics and fitness program for a group of people; identify physical effects of specific types of exercise; list preventive aspects of fitness and coronary heart disease; describe a weight reduction plan as it relates to exercise and calories; demonstrate skill in use of weight training equipment. (3-3) 4

NOTE: Successfully completed HPE courses may not be repeated without division head approval.

SELF-SUPPORTING: Credit will be given for successful completion of a self-supporting course. However, no additional credit will be given for repeating the same course.

High School Completion, Adult

HSC 6001 High School Completion English: Upon completion of this course, students should be able to do the following: recognize and define the parts of speech and the main parts of a sentence, recognize and correct grammatical errors, demonstrate reading comprehension skills, demonstrate a familiarity with Greek and Latin prefixes, suffixes and root words, spell and define words taken from a list of commonly used and frequently misspelled words, and write coherent sentences and paragraphs. This course meets the English requirement for obtaining a diploma from Charlotte-Mecklenburg Schools through Central Piedmont Community College.

HSC 6011 High School Completion Mathematics: Upon completion of this course, students should be able to do the following: apply the four fundamental operations of arithmetic and elementary principles of algebra and geometry to the solutions of problems involving percent, averages, simple and compound interest, discount and commission, English and metric measures of length, mass, and volume, time and distance, statistical graphs (bar, circle and line), ratio and proportion, scale drawings, scientific notation, perimeter, area and volume of common geometrical figures, square root, the Pythagorean Theorem, and simple linear equations. This course meets the

mathematics requirement for obtaining a diploma from the Charlotte/Mecklenburg Schools through CPCC.

HSC 6021 High School Completion United States History and Government: Upon completion of this course, students should understand our federal system of government and how our Constitution works; be able to interpret the major events and identify the Presidents and their roles in American history from 1900 to the present; and have an increased appreciation for their role as participants in the American system of government. This course meets the history requirement for obtaining a diploma from the Charlotte/Mecklenburg Schools through CPCC.

HSC 6031 High School Completion Science and Biology: Upon completion of this course, students should be able to demonstrate knowledge and understanding of matter, energy forms—heat, light, sound, magnetism, electricity, nuclear energy, the action of forces, the microscope, cell structure, plant strustures and functions, taxonomy, conservation and ecology, human body systems, nutrition, reproduction, genetics, evolution, and diseases of man. This course meets the science requirement for obtaining a diploma from the Charlotte/Mecklenburg Schools through CPCC.

History

HIS 1500 World Civilization I: This course involves a study of the development of civilization from the prehistoric period to the Seventeenth Century. Upon completing this course, students should be able to analyze significant events and identify patterns in early political, socio-economic, religious, intellectual and artistic development in Europe, Asia and Africa, making relationships between past events and relating these to contemporary problems. (5-0) 5

HIS 1501 World Civilization II: This course involves a study of development of civilization from the Seventeenth Century to the present. Upon completing this course, students should be able to analyze significant events and identify patterns in recent political, socio-economic, religious, intellectual and artistic development in Europe, Asia, Africa and the Americas, thus giving context for understanding the present world order. (5-0) 5

HIS 1502 American History I: Upon completion of this course, students should be able to: analyze significant events and identify patterns in the political, socio-economic, religious, intellectual and cultural developments in America from the Colonial era to 1877; evaluate major historical interpretations of this period of American history. (5-0) 5

HIS 1503 American History II: Upon completion of this course, students should be able to: analyze significant events and identify patterns in the political, socio-economic, religious, intellectual and cultural developments in American history from 1877 to the present; evaluate major historical interpretations of this period of American history. (5-0) 5

HIS 1510 The American Civil War: Upon completion of this course, students should be able to: explain why the Civil War was a turning point in our nation's history; describe why the tragic years from 1861 to 1865 form an important episode in our national history; explain why, before 1860, the Southern economy was bound to the institution of slavery; describe how the divergent economic structures of the North and South would cause conflict; explain the frame of reference of the North and South in terms of ideology. (5-0) 5

HIS 1520 Black History I: Upon completion of this course, students should be able to: analyze significant events and identify patterns in the political, socio-economic, religious, intellectual and cultural developments of the Black American from ca. 3000 B.C. to 1865; analyze and evaluate the philosophies of major Black American leaders from the era of Colonial America to the era of the Civil War; evaluate major historical interpretations of Black American history. (5-0) 5

HIS 1521 Black History II: Upon completion of this course, students should be able to: analyze significant events and identify patterns in the political, socio-economic, religious, intellectual and cultural developments of the Black American from 1865 to the present; analyze and evaluate the philosophies of major Black American leaders during this period; evaluate major historical interpretations of Black American history. (5-0) 5

***HIS 2104-2504 Special Topics in History:** This designation allows students individually or in groups to investigate in greater detail special topics of particular interest not covered in regular classroom offerings. The specific objectives will vary with each course. *Prerequisite: consent of instructor and department head. (1 to 5 hrs. class/week—1 to 5 hrs. credit).

HIS 2500 North Carolina History: Upon completion of this course, students should be able to examine the major historical, geographical and governmental developments in North Carolina from the colonial era to the present. Through field trips and special projects they will evaluate the cultural developments and socio-economic contributions of the State. (5-0) 5

Horticulture

HOR 3111 Horticulture Seminar: Upon completion of this course, students should be able to: demonstrate knowledge of various horticulture job classification responsibilities and rewards that are entailed in each; demonstrate knowledge of various horticultural organizations and agencies. (1-0) 1

HOR 3202 Home and Yard Horticulture: Upon completion of this course, students should be able to: recognize common woody and herbaceous plant material and make decisions regarding its use; demonstrate a general knowledge of grounds maintenance to include fertilizing, pruning and plant pest control; demonstrate a general knowledge of plant, turf and specialty garden installation requirements. (2-0) 2

***HOR 3205 Cooperative Work Experience (Co-Op):** Upon completion of this course, students should be able to: exhibit a positive attitude toward work in a horitcultural business; gain applied experience to supplement class and lab learning. *Prerequisite: Permission of program director or program counselor. Prerequisite or Corequisite: Registration for HOR 4200. (0-20) 2

HOR 3210 Floral Design: Upon completion of this course, students should be able to: demonstrate basic care and handling of cut flowers; choose and utilize basic floral supplies; demonstrate the 9 fundamental floral design lines; demonstrate 4 basic types of floral design pieces. (1-2) 2

HOR 3302 Landscape Graphics and Measurements: Upon completion of this course, students should be able to: execute measurements commonly used in landscaping; read "working" landscape plans and specifications; prepare basic "working" landscape plans and specifications; reproduce landscape plans. (2-2) 3

HOR 3304 Computer-Aided Landscape Graphics: Upon completion of this course, students should be able to: identify and define the components of a CAD system and compare component functions in major systems; demonstrate proficiency in the use of commands and controls of a CAD system; produce a library of landscape symbols; produce scale landscape drawings to include site layout, plant symbols, and appropriate lettering. *Prerequisite: HOR 3302 or permission of program director. (2-3) 3

HOR 3307 Landscape Your Own Home: Upon completion of this course, students should be able to: analyze the outdoor needs of the family and the environment factors affecting the property; allot space for landscape uses; choose the proper plant material and outdoor architectural features to enhance their property; discuss and construct basic landscape construction features. (3-0) 3

HOR 3312 Indoor Plants: Upon completion of this course, students should be able to: describe the characteristics to look for in houseplants and plant shops; discuss the importance of selected tools, supplies and containers for proper houseplant care; discuss the effects of selected environmental factors important to houseplants; identify 50 selected houseplants; identify and give control measures for 12 selected pest problems of houseplants. (2-2) 3

HOR 3360 Organic Methods in Horticulture: Upon completion of this course, students should be able to: identify plant nutrient requirements and pest problems; use resource materials to recommend corrective organic methods for nutrient deficiency and plant pest problems; set up and practice organic methods of plant problem remediation and maintenance. (2-2) 3

HOR 3400 Landscape Plants I—Woody: Upon completion of this course, students should be able to: identify by sight 90 selected plants; list the physical characteristics, cultural requirements and landscape uses of these plants; identify any special remarks regarding these plants. (3-2) 4

HOR 3401 Plant Propagation I: Upon completion of this course, students should be able to: perform the following types of asexual propagation: layering, cuttings, grafting, budding, dividing; perform sexual (seed) propagation of ornamental plants; select, use and maintain equipment and supplies used in plant propagation; choose the correct propagation method for a variety of ornamental plants. (2-4) 4

HOR 3404 Landscape Plants II—Woody and Herbaceous: Upon completion of this course, students should be able to: identify by sight 120 selected plants; list the physical characteristics, cultural requirements and landscape use of these plants; identify any special remarks regarding these plants. (3-2) 4

HOR 3405 Grounds Maintenance II: Upon completion of this course, students should be able to: explain the purpose of and list sources of the major, minor and trace nutrient elements; perform simple soil tests for nutrient content and pH; select and apply fertilizers correctly to selected ornamentals; identify and execute preventive and corrective controls of selected insect pests of ornamentals; identify and execute preventive and corrective controls of selected disease pests of ornamentals; select, use and maintain equipment, items and materials used in the above operations. (2-4) 4

HOR 3410 Turf Management: Upon completion of this course, students should be able to: identify at least 7 selected turf grasses; list the cultural requirements for each of the seven selected turf grasses; establish turf grasses by 4 different methods; maintain turf grass by being able to select and use turf equipment and supplies; identify and control common turf pests. (2-4) 4

HOR 3503 Nursery Technology: Upon completion of this course, students should be able to: perform the day to day operations used to grow, maintain and harvest both container and field grown nursery stock; select, use and maintain nursery equipment and supplies; discuss the various kinds of nurseries; discuss marketing of nursery products and services; perform garden center operations. (3-4) 5

HOR 3504 Grounds Maintenance I: Upon completion of this course, students should be able to: identify problems of and execute preventive and corrective controls of weed problems common to ornamentals; select and apply mulches for usual maintenance situations; identify and execute preventive and corrective controls of water problems in grounds maintenance; prune all plants on a selected list of ornamentals; select, use and maintain equipment items used in the above operations. (3-4) 5

***HOR 3505 Landscape Gardening**: Upon completion of this course, students should be able to: analyze the landscape potential of a landscape project area; prepare detailed landscape plans, plant lists and planting specifications; install a landscape planting; perform basic landscape construction. *Prerequisite: HOR 3302. (3-4) 5

HOR 4200 Work Experience Seminar: Upon completion of this course, students should: describe tasks and competencies under various jobs performed during co-op experience; discuss employee-employer relationships; complete a job application and simulated job interview. (2-0) 2

***HOR 4203 Advanced Floral Design**: Upon completion of this course, students should be able to: demonstrate skill in the processing of cut flowers; demonstrate skills in the following floral design areas: container setup and selection, holiday arrangements, advanced wedding arrangements, advanced funeral pieces, dried flower, silk and twig arrangements, mats, brooms and fruit arrangements, oriental and free form creative design pieces. *Prerequisite: HOR 3210 or permission of instructor. (1-2) 2

HOR 4400 Arboriculture: Upon completion of this course, students should be able to: identify growth characteristics of selected shade and ornamental trees; select and apply correct tree maintenance procedures to include: fertilizing, pruning, pest prevention and control; know and apply basic safety rules of climbing and felling. (2-4) 4

***HOR 4404 Plant Propagation II**: Upon completion of this course, students should be able to: perform advanced asexual propagation techniques to include: 5 types of layers, 7 types of cuttings, 6 types of grafts and/or buds, and aseptic cultures; perform advanced sexual propagation techniques to include: selected pollination, scarification, stratification; complete detailed propagation project as assigned by the instructor. *Prerequisite: HOR 3401. (2-4) 4

HOR 4411 Greenhouse Horticulture: Upon completion of this course, students should be able to: demonstrate a working knowledge of greenhouse construction, materials and equipment; discuss the physical and cultural needs of greenhouse plants; demonstrate a working knowledge of the growing of cut flower, bedding plant, seasonal pot plant and foliage plant crops. (2-4) 4

Hospital Ward Secretary

HRC 5300 Orientation to Health Record Clerk: At the completion of this course, students should be able to: describe the structure and functions of the different types of medical facilities; discuss the job description of personnel who work with the health record; identify the qualifications required of a health record clerk; demonstrate good interpersonal relationships in given situations. (2-2-0) 3

***HRC 5301 Receptionists Skills:** At the completion of this course, students should be able to: perform the receptionist duties and assume the responsibilities of this position in a medical facility; explain various types of medical insurance and complete insurance claim forms correctly for each. *Prerequisite: HRC 5300. (2-2-0) 3

HRC 5302 Professional Interactions and the Health Worker: Upon completion of this course, students should be able to: discuss skills needed to establish rapport between health worker and patient as well as co-worker; list the effects that behavior of the health worker may have on the well being of the patient; discuss the goal of the health care institution with relationship to the community, the health professional and the patient. (3-0-0) 3

***HRC 5401 Unit Clerk Procedures:** At the completion of this course, students should be able to perform the clerking tasks that are routinely done on the nursing unit of a medical facility. *Prerequisites: HRC 5300, MED 3304. (2-4-0) 4

Hotel/Restaurant Management

HRM 3300 Introduction to Hotel/Restaurant Management: Upon completion of this course, students should be able to: compare the present-day operations of inns and restaurants to those of the past; define the different types of restaurant and food services; identify the positions within hotels and restaurants; compare the departments within a hotel and restaurant; distinguish between franchise and individually owned properties; assess future opportunity in a challenging and rewarding career with the hospitality industry. (3-0) 3

HRM 3301 Financial and Legal Aspects of Innkeeping: Upon completion of this course, students should be able to: assemble and organize a system to prevent lawsuits and losses costly to today's inns; relate local, state and federal regulations to operations of a modern inn; describe different instruments of finance that are used in the operation of a modern inn. (3-0) 3

HRM 3104 Speaker Seminar I: Upon completion of this course, as a result of field trips, guest speakers and lecturers, students should be able to perform with greater competence in the particular work-related skills involved in the specific jobs observed; evaluate their own interest and performance in the given occupational field and their potential success and advancement in that occupation; assess realistically the general requirements and responsibilities of successful employment and evaluate their own capacity to comply with such demands; analyze the job market in their chosen career prior to entrance into that career as a full-time employee. (1-0) 1

HRM 3105 Speaker Seminar II: A continuation of Speaker Seminar I. Upon completion of this course, as a result of field trips, guest speakers and lecturers, students should be able to

perform with greater competence in the particular work-related skills involved in the specific jobs observed; evaluate their own interest and performance in the given occupational field and their potential success and advancement in that occupation; assess realistically the general requirements and responsibilities of successful employment and evaluate their own capacity to comply with such demands; analyze the job market in their chosen career prior to entrance into that career as a full-time employee; demonstrate managerial problem-solving ability. (1-0) 1

HRM 4200 Topics in Hotel/Restaurant Management: Students will conduct career related projects as described in the training plan. The training plan, designed to meet needs not met by other offerings, will be developed by the program director and an appropriate training sponsor in the business community. Each student will work under the direct supervision of the program director. Approval of the sponsor, division head and appropriate vice president is required. TBA

HRM 4300 Hotel/Restaurant Marketing: Upon completion of this course, students will be able to: organize a marketing schedule for future use; assemble positive sales ideas; prepare property and market analyses; prepare a sales forecast; develop a sales promotion for a particular property. (3-0) 3

HRM 4301 Housekeeping Procedures: Upon completion of this course, students should have demonstrated the ability to: plan an organized area for the housekeeping department; implement a time study and procedures standard for cleaning a motel room; identify hazards in a motel; develop standards and procedures for purchasing and inventory controls; implement procedures for the reporting of repairs and preventive maintenance needs. (3-0) 3

HRM 4302 Hotel/Restaurant Management Related Problems: Upon completion of this course, students should be able to: compare circumstances of hotel/restaurant operations to everyday work situations; institute a workable plan to control and maintain good employee morale; write and identify standards of dress and conduct. Through role playing and analysis, students will become familiar with actual situations which will be encountered in future employment. (3-0) 3

HRM 4504 Practicum I: Upon completion of this course, students should be able to exhibit positive work attitudes and write job descriptions for the departments within the hotels/motels assigned during clinical experience. Lab or clinical experience will consist of on-the-job training within the following areas: Housekeeping, Superintendent of Transportation and Services, Maintenance and Front Office. (3-20) 5

HRM 4505 Practicum II: A continuation of Practicum I with continued emphasis on work attitudes and job descriptions. Students will be assigned to the restaurant of a hotel/motel and will cover the following areas: Dishwashing Department. Salad Department, Cook's Helper, Chef's Helper, Chef's Assistant, Dining Room-Busboy, Dining Room-Waiter/Waitress, and Bar/Lounge Bartender. (3-20) 5

HRM 4506 Practicum III: A continuation of Practicum II. Emphasis in this course will be placed on students becoming familiar with the following areas: Accounting-Auditors Office, Credit Department, Personnel Department and General Manager. Students will be assigned to hotels/motels within the Charlotte area to complete their clinical experience. A week of analysis and evaluation is included to assist the graduate in ascertaining job opportunities in the hospitality industry. (3-20) 5

Human Resource Development

HRD 6001 Job-Seeking Skills: In this course, students learn the skills needed to obtain employment. On completion of this course, students should be able to: complete an employment application correctly, write a resume, find job leads, and perform well in interviews.

Human Services

HSA 3105 Fingerspelling: Upon completion of this course, students should be able to: identify the fingerspelled word in context at an average of 75% or better; identify the number in context at an average of 75% or better; fingerspell fluently, glossing the word, not the letters. (0-2-0) 1

HSA 3106 Sign to Voice Lab: Upon completion of this course, students should be able to demonstrate the ability to comprehend the appropriate content and intent of the signed messages with a 75% accuracy or better. Prerequisite: HSA 3514 or instructor consent. (0-2-0) 1

HSA 3121 Special Issues Related to Children I: Upon completion of this course, students should be able to: discuss current data of a specific issue related to children and families; identify and describe specific causes related to a specific issue; describe preventive and remedial strategies related to a specific issue; identify specific human resources available to assist children and families in need. (1-0-0) 1

HSA 3202 Crisis Intervention: Upon completion of this course, students should be able to: identify and discuss the emotional and physical bases of stress/anxiety; identify and define real-life crises of: alcohol and drug abuse, bereavement, suicide, grief and loss, individual and group psychiatric emergencies, and special problems; identify and discuss the major factors and characteristics of a disaster and community crisis to include: psychological shock, disaster syndrome, variation of victim reaction, and psychological epidemic; identify appropriate methods of crisis intervention; demonstrate appropriate skills of crisis intervention. (2-0-0) 2

HSA 3221 Special Issues Related to Children II: : Upon completion of this course, students should be able to: discuss current data of a specific issue related to children and families; identify and describe specific causes related to a specific issue; describe preventive and remedial strategies related to a specific issue; identify specific human resources available to assist children and families in need. (2-0-0) 2

***HSA 3304 Sign Systems and Specialized Vocabulary for Interpreters:** Upon completion of this course, students should be able to: demonstrate expressive and receptive ability with specialized vocabulary with an accuracy of 75% or better; place language samples along a continuum from English to ASL and explain rationale; identify and differentiate various sign systems; demonstrate ability to discuss various sign systems' characteristics; demonstrate ability to identify prefixes and suffixes when they appear in text. *Prerequisite: HSA 3345 or instructor consent. (3-0-0) 3

HSA 3305 Introduction to Interpreting: Upon completion of this course, students should be able to: define interpreting terms; list and discuss the RID Code of Ethics; show and explain rationale for the placement of interpreters for varied interpreter settings; list and discuss the environmental factors which

must be considered in an interpreting assignment; describe the assessment and certification process; report and obtain pertinent information for interpreting assignment. (3-0-0) 3

HSA 3306 Linguistics of Interpreting: Upon completion of this course, students should be able to: identify and define processes of interpreting and related terms; identify and demonstrate exercises that improve skills in the various processes of interpreting; identify and interpret the meaning of various visual and auditory stimuli; critique their own skills, identifying areas of weakness and matching them with exercises to help improve those areas. (3-0-0) 3

HSA 3310 The Exceptional Child: Upon completion of this course, students should be able to: identify and discuss characteristics of developmental exceptionalities; identify community and state resources available for families with exceptional children; identify a variety of activities appropriate for children who are exceptional in personality and/or physical development; identify ways exceptional children use materials, supplies, and equipment differently from other children; identify techniques of working with parents to help lessen their apprehensions about their child's condition; define the procedures for referring a child to special services. (3-0-0) 3

HSA 3311 Materials and Activities for the Young Child: Upon completion of this course, students should be able to: describe the role of play and play materials in the development of the young child; describe the teacher's role in fostering and guiding children's creative ability; identify raw art materials, their potential and use with the young child; identify the principles and practices of music, movement, sound and rhythm for the young child; identify the process of language development through the use of children's books, story-telling, dramatization; identify appropriate science and math experiences and materials; identify and discuss techniques for implementing a stimulating outdoor learning environment; describe and discuss importance of manipulative toys and blocks in the development of the young child. (3-0-0) 3

HSA 3321 Special Issues Related to Children I, II, and III: Upon completion of this course, students should be able to: discuss current data of a specific issue related to children and families; identify and describe specific causes related to a specific issue; describe preventive and remedial strategies related to a specific issue, identify specific human resources available to assist children and families in need. (3-0-0) 3

HSA 3324 Conversational Sign Language I: Upon completion of this course, students should be able to: converse on a one-to-one basis with a hearing-impaired individual in a work or social environment; demonstrate a basic knowledge of techniques which make communicating with a hearing-impaired person more effective; demonstrate a practical sign vocabulary of core and specialized signs of between 300-350 words. (3-0-0) 3

***HSA 3325 Conversational Sign Language II:** Upon completion of this course, students should be able to: converse with a hearing-impaired individual in a work, school, home, business, and social environment; demonstrate an advanced knowledge of communication techniques; demonstrate a practical sign vocabulary of core and specialized signs of between 500-750 words; demonstrate receptive and expressive fingerspelling and numbers skills. *Prerequisite: HSA 3324. (3-0-0) 3

***HSA 3326 Advanced Materials and Activities for the Young Child:** Upon completion of this course, students should be able to: expand on the basic file box of activities begun in HSA 3311, which will include at least 20 art activities, 20 songs and 20 other musical activities, titles and summaries of 20 appropriate books for young children, 20 finger plays and 20 other language-related activities, 20 appropriate science activities, 20 appropriate math activities, 10 outdoor experiences that will expand the young child's learning, 10 suggestions for stimulating play in the block corner, 10 suggestions for teacher-made manipulative materials; demonstrate the understanding of activities appropriate for different developmental levels (through the activities selected for the file box); plan, organize and carry out a teaching unit which will include all of the stated areas; demonstrate the knowledge of the teacher's role in fostering and guiding children's creative ability; demonstrate the capacity to foster and guide young children's creative ability. *Prerequisite: HSA 3311 or permission of program director. (3-0-0) 3

HSA 3340 Client Group Dynamics: Upon completion of this course, students should be able to: demonstrate their own style of group leadership in working with client groups; identify various behavioral roles of clients within groups; demonstrate methods of motivating clients and resolving conflicts within client group interactions. Prerequisite: HSA 3501, HSA 3502, or consent of program director. (3-0-0) 3

HSA 3341 Interpersonal Relationships II: Upon completion of this course, students should be able to: distinguish between assertive, passive and aggressive behaviors; develop their own assertive skills and demonstrate the use of these skills in professional and personal behavior. Prerequisite: HSA 3501, HSA 3502, or consent of program director. (3-0-0) 3

HSA 3360 Understanding Adolescence: Upon completion of this course, students should be able to: differentiate major developmental characteristics associated with pre-adolescence, early adolescence, late adolescence changes; identify and describe specific characteristics of the adolescent in the areas of physical, cognitive, social, emotional and moral development; identify and discuss the inter-relationship between the social, emotional, cognitive and physical development of the adolescent; identify and describe social and familial factors which prevent and encourage maximum growth and development of the adolescent. (3-0-0) 3

***HSA 3403 Introduction to Day Care Administration:** Upon completion of this course, students should be able to: describe the steps involved in setting up child care programs according to state and federal guidelines; describe the management practices required in quality child care programs including fiscal budgets, records, ordering of supplies, equipment, scheduling, operational policies, describe personnel practices required in quality child care programs, including job descriptions, interviewing techniques, staff evaluations, staff development, describe parent and community resources available to child care centers. *Prerequisite: program director approval. (3-0-3) 4

***HSA 3414 Helping Relationship, Advanced Technique:** Upon completion of this course, students should be able to: identify and distinguish appropriate responses in the initial and continuous helping relationships, to include helper assertiveness and client motivation; discuss the force-field analysis of problem solving, to include: identifying and clarifying the client's problems and establishing the client's priorities, establishing client's goals and implementing tasks, reviewing and evaluating the client's progress; demonstrate a more effective skill of helping by the use of: feeling discrimination, concreteness, confrontation and alternative action, decision making and problem solving. *Prerequisite: HSA 3604. (3-0-3) 4

HSA 3421 Helping and Behavioral Stress: Upon completion of this course, students should be able to: identify and discuss the major factors of behavioral and physical development relating to stress/anxiety; identify and define positive and negative factors of stress and identify methods for defining and coping with individual anxiety; identify and define real-life crises of: alcohol and drug abuse, suicide, bereavement, grief and loss, maturation, the family, and individual psychiatric emergencies; define and discuss the association to crisis/stress of: anxiety, defense mechanisms, values and belief systems, needs, and cultural and environmental influences; identify and discuss the major factors and characteristics of a disaster and community crisis, to include: psychological shock, disaster syndrome, variation of victim reaction, and psychological epidemic; identify methods of psychological helping for persons in crisis and appropriateness of such crisis intervention to specific behavioral problems; demonstrate skills of coping with individual anxiety/stress and of helping a stress victim(s), both in non-verbal and verbal response; identify various local agencies dealing with crisis and discuss their function and methods of referral and treatment. (4-0-0) 4

***HSA 3501 Introduction to HSA:** Upon completion of this course, students should be able to: describe the Human Services program, including the three option areas: give the four core courses, describe their content and explain the rationale for inclusion as core courses; given an option area, name at least three agencies related to it and describe the type of clients referred to these agencies; describe correctly the procedure for being advised and contracting for field placement; identify the following specific major client groups and the various stresses caused by social, emotional, and physical characteristics associated with each group: Mental Health, Emotionally Disturbed, Alcoholism, Drug Abuse, Sexuality, Mental Retardation and Brain Damage, Epilepsy, Learning Disabilities, Visual Impairment, Hearing and Speech Impairment, Physical Disabilities, Aging; identify specific agencies which offer services to the above client groups. *Prerequisite: permission of program director only. (5-0-0) 5

***HSA 3502 Interpersonal Relationships I:** Upon completion of this course, students should be able to: demonstrate five skills of non-verbal communications; demonstrate five skills of verbal communications; identify and list at least three personal strengths and three weaknesses in relationships with others; identify five personal values; identify four personal behavioral goals; demonstrate ability to change two identified negative behaviors and develop two identified positive behaviors; list and describe Maslow's Hierarchy of Needs; list Erikson's eight stages of development; list and describe Powell's five levels of communication; identify and describe five games people play and the defense mechanism involved in each. *Prerequisite: HSA 3501 or consent of program director. (5-0-0) 5

***HSA 3510 School Age Child Care:** Upon completion of this course, students should be able to: describe the growth and development of the school aged child, with emphasis on the middle and late childhood years; identify the physical, social, emotional, and intellectual needs of the school aged child; describe the principles underlying an after-school care program; plan particular segments of a program for the school aged child; implement particular segments of a program for the school-aged child. *Prerequisite: program director consent. (3-0-6) 5

***HSA 3511 Infant and Toddler Development:** Upon completion of this course, students should be able to: describe the normal growth and development of the infant; identify the needs of the developing infant; describe the normal growth and development of the toddler; identify the needs of the developing toddler; list and discuss the principles underlying a program for infants and toddlers; plan particular segments of a program for infants and toddlers; implement particular segments of a program for infants and toddlers. *Prerequisite: program director consent. (3-0-6) 5

***HSA 3514 Interpreting I:** Upon completion of this course, students should be able to demonstrate: accuracy and clarity in expressive interpreting and translating at a speed of 60-80 words per minute; a minimum ability in receptive skills of 40-60% understanding of the signer's intent and general content of the signed message; through role play, actual experience, and written tests a practical awareness of interpreting in educational, deaf/blind and religious interpreting; expressive and receptive fingerspelling accuracy and clarity on a beginning level (60%) as indicated by skills tested. *Prerequisite: HSA 3545 and HSA 3518 or instructor consent. (2-6-0) 5

***HSA 3515 Interpreting II:** Upon completion of this course, students should be able to demonstrate: accuracy and clarity in expressive interpreting and translating at a speed of 80-100 WPM; a receptive ability in understanding intent and content in the signed message of a deaf speaker at a rate of 60-74%; through role play, actual experience, and written tests, a practical awareness of interpreting in V.R., community agencies, and interview situations; the responsibilities of the interpreter; the appropriate physical setting; the special vocabulary, ethics; through role play and actual experience, a practical awareness of artistic and platform interpreting; expressive and receptive fingerspelling at an intermediate (60-80%) level as indicated by skills tests. *Prerequisite: HSA 3514 or instructor consent. (2-6-0) 5

***HSA 3516 Interpreting III:** Upon successful completion of this course, students should be able to demonstrate: accuracy and clarity in expressive interpretating and translating at a speed of 100-125 words per minute; a receptive ability in understanding the intent of deaf signers at a rate of 75-100%; through role play, actual experience, and written tests, a practical awareness of interpreting in legal, medical, and oral situations; receptive and expressive fingerspelling clarity and accuracy as indicated by skills test. *Prerequisite: HSA 3515 or instructor consent. (2-6-0) 5

***HSA 3517 Sign to Voice Interpreting:** Upon completion of this course, students should be able to demonstrate: a receptive ability to communicate the appropriate content and intent of deaf signers into correctly spoken English at a level of 60-74%; a receptive ability to communicate the appropriate mood, sign inflection, and emotional intent of deaf signers into vocally expressive English at a level of 60-74%; through role play and written tests, a practical awareness of the R.I.D. Code of Ethics as it pertains to sign to voice interpreting; awareness of the principles of lip reading and how those principles aid in sign to voice interpreting, as indicated by skills tests; a receptive ability to communicate fingerspelled words into spoken English at a level of 64-74%. *Prerequisite: HSA 3515 or instructor consent. (2-6-0) 5

***HSA 3518 Interpreting Idioms:** Upon succesful completion of this course, students will demonstrate: a working competence with approximately 200 basic sign language idioms as shown in both written tests and expressive signing with an average of better than 75%; the ability to discuss the sociological implications of deafness. *Prerequisite: HSA 3544 or instructor consent. (5-0-0) 5

HSA 3544 Sign Language I: Upon completion of this course, students should be able to: demonstrate communication skills on a non-technical level with members of the deaf population in both expressive and receptive American Sign Language; interact with deaf persons on a one-to-one basis; demonstrate an awareness and relate to the difficulties of a deaf person growing up in a hearing society; demonstrate a practical sign vocabulary of 300-375 words. (5-0-0) 5

HSA 3545 Sign Language II: Upon completion of this course, students should be able to: demonstrate accuracy and clarity in fingerspelling with an average of better than 75% on both expressive and receptive tests; demonstrate a practical sign vocabulary of 500-750 words; apply grammatical principles of ASL as demonstrated on tests with 75% accuracy or better; discuss deaf culture and list things which support and define that culture. *Prerequisite: HSA 3544 or instructor consent. (5-0-0) 5

***HSA 3600 Community Organization and Casework Preparation:** Upon completion of this course, students should be able to: identify and define a Human Service paraprofessional; identify and describe roles and correlated activities that an HSA worker might play in social change in a local neighborhood or community; identify and describe the philosophies, measures, and procedures used in vocational and social rehabilitation of the physically and mentally disabled; identify and describe the scientific method of problem solving; identify the members of the professional teams used in human services agencies and describe their backgrounds and functions; identify the major organizational structure of human resources at federal, state and local levels, to include functions and practices; identify and describe strengths and weaknesses of current delivery systems; observe behavior and record significant observations in simple descriptive form; identify documents in a case file and basic forms used in various agencies; identify facilitative methods of questioning in a helping interview; identify various non-verbal and verbal cues in a helping interview; demonstrate the use of appropriate questions, statements, and non-verbal responses in a helping interview. *Prerequisite: HSA 3340 and HSA 3341. (3-0-9) 6

***HSA 3604 Helping Relationship—Technique:** Upon completion of this course, students should be able to: discuss the Model of Facilitation, identifying the levels of a helping relationship and their characteristics as found in the Model; identify non-verbal communication behaviors of time, body and vocal media and discuss their effect in the helping relationship; identify closed and open questions and discuss their use in the helping relationship; identify and distinguish appropriate and inappropriate responses and leads; demonstrate effective use of appropriate responses and leads.* Prerequisite: HSA 3600 or permission of program director. (3-0-9) 6

HSA 4300 Hearing and Deafness: Upon successful completion of this course, students should be able to: relate the nature and perception of sound to the sense of hearing; identify the major parts of the ear and the function of each part; classify hearing losses according to auditory dysfunctioning; describe some common causes of deafness; identify various medical/surgical treatments of hearing losses; identify the roles of the various professionals and paraprofessionals involved in the diagnosis and treatment of hearing losses. (3-0-0) 3

HSA 4304 Orientation to Deafness: Upon completion of this course, students should be able to: trace the changing attitudes toward and treatment of the deaf in Europe and America from 300 B.C. to the 20th Century; compare and contrast the mental development, emotional adjustment, and social maturity of hearing-impaired and hearing individuals; demonstrate and evaluate various communication methods used in the education of the deaf. (3-0-0) 3

HSA 4310 Adult/Child Relations: Upon successful completion of this course, students should be able to: identify principles underlying the development of a positive self-concept in young children; identify and demonstrate effective listening skills, i.e., active listening, essential to positive one-to-one interaction and positive small group interaction with young children; identify and demonstrate effective listening and communication skills essential to positive (job related) interaction with parents and staff in a variety of situations. (3-0-0) 3

***HSA 4500 Working with Parents:** Upon completion of this course, students should be able to: discuss the importance of the caregiver establishing and maintaining a positive relationship with parents; demonstrate positive relationships with parents by daily contact and occasional conferences to facilitate the free flow of information about the children's lives inside and outside the center; demonstrate techniques of interaction with parents (i.e., parent conferences, parent group meetings, newsletter) which will facilitate increased understanding of children; identify and discuss values that could exist among families participating in a child care center; plan and work with a family to develop consistent responses to the child's behavior and common goals in education; identify the strengths and talents of parents as they may contribute to the development of their own children, and demonstrate, by invitations to parents, every possible opportunity to participate and enrich the group program, i.e., classroom visits, trips into the community; discuss ways to promote positive parental self-concept. *Prerequisite: program director or instructor approval. (3-0-6) 5

HSA 4505 Helping Relationship: Upon completion of this course, students should be able to: identify the basic principles of various techniques used in helping, to include: Psychoanalysis, Existential-Humanistic, Behavior Modification, Transactional Analysis, Rational-Emotive, Client-Centered, Gestalt, Reality, Group, and others; discuss the theory of human behavior which forms a basis for each technique; identify major founders/contributors to each theory/technique; describe how each technique is used with clients, identifying advantages and disadvantages, positive and negative aspects, of each technique; compare and contrast the various theories and techniques. (5-0-0) 5

***HSA 4508 Seminar:** Upon completion of this course, students should be able to: discuss thoroughly the work experience in the student's specialty area; discuss the procedures, treatment methods and service techniques on the agency where the student interns; complete an in-depth research project as a major contribution to the student's Human Service program selected in consultation with the instructor; maintain fifteen hours of internship per week, documented in a weekly log reflecting the student's experiences in the internship. *Prerequisite: By permission of program director only. (0-0-15) 5

HSA 4511 Introduction to Social Welfare: Upon completion of this course, students should be able to: define social welfare and its relationship to social work in the United States; discuss the social, historical, and political development of the American Social Welfare System and its institutions; identify and discuss recent trends in social welfare, including the identification of current legislation (laws, bills) affecting the system; discuss the basic characteristics of American society which contribute to the breakdown of individual and family self-care;

discuss the condition and extent of poverty in the United States today and current programs, both in operation and proposed, aimed at the alleviation of poverty and related social conditions. (5-0-0) 5

HSA 4524 Helping Interview I: Upon completion of this course, students should be able to: demonstrate self-awareness and identify the concepts of worker-client interaction through value clarification of the agency/program clientele, and the helping process; identify and demonstrate good attending skills and the use of appropriate questions to elicit information; identify and demonstrate the stages of a helping interview; identify and demonstrate skills of listening, feedback, and feeling discrimination toward the client; identify methods of client referral to other services and/or agencies. (2-0-9) 5

***HSA 4614 Practical Problems of Child Care II:** Upon completion of this course, students should be able to: identify and describe the principles underlying a pre-school program which supports the developmental needs of the whole child; describe and implement effective techniques in observing and assessing the developmental needs of young children, i.e., anecdotal records, Koontz Child Developmental Program; describe and implement effective techniques in evaluating pre-school environments in relation to the developmental needs of young children, i.e., classroom assessment tool, teacher assessment tool; plan segments of a daily program for a group of young children; implement segments of a planned daily program for a group of young children. *Prerequisite HSA 5500. (2-0-12) 6

HSA 5200 Human Relations: Upon completion of this course, students should be able to: demonstrate self awareness and personal growth by listing five or more new things that they have learned about themselves and five or more ways in which they have changed; identify at least five of the things in life they value; demonstrate skills for effective communication with others, such as listening, empathy; list ten defense mechanisms and discuss the ones each student uses; list five or more goals and decisions they have made during the course; discuss at least five ways to put into practice on a future job some of the human relations skills learned during the course. (2-0-0) 2

***HSA 5500 Practical Problems of Child Care I:** Upon completion of this course, students should be able to: demonstrate effective techniques for working with children, i.e., showing respect for children as individuals with unique growth patterns and the ability to approach each child as a person of worth; identify the various roles of the teacher as a facilitator of learning, as a model for children, and as a guide of children, using both direct and indirect techniques; demonstrate effective techniques to use when developing satisfactory patterns of interacting with parents and staff; describe the curriculum for young children and identify the experiences, media, and facilities which promote optimal development and self-discipline (self-knowledge). *Prerequisite or corequisite: HSA 5501. (3-0-6) 5

***HSA 5501 Child Development:** Upon completion of this course, students should be able to: identify the stages of the young child's development; identify and discuss the interrelationship between the social, cognitive, emotional and physical development of the child; identify and describe factors which prevent and encourage maximum growth and development of the child; identify and describe the characteristics of the child at different stages in the areas of social, cognitive, emotional, language, moral and physical development; discuss the importance of play to the child's total development. *Prerequisite: program director or instructor approval. (3-0-6) 5

***HSA 5510 CDA Practical Lab I—Setting Up and Maintaining a Healthy Learning Environment:** Upon completion of the practical lab experience, students should be able to: organize space into functional areas recognizable by the children, e.g., block building, library, dramatic play, etc.; maintain a planned arrangement for furniture, equipment and materials, and for large and small motor skills learning, and for play materials that are understandable to the children; organize the classroom so that it is possible for the children to be appropriately responsible for care of belongings and materials; arrange the setting to allow for active movement as well as quiet engagement; take preventive measures against hazards to physical safety; keep light, air and heat conditions at best possible levels; establish a planned sequence of active and quiet periods, of balanced indoor and outdoor activities; provide for flexibility of planned arrangement of space and schedule to adjust to special circumstances and needs of a particular group of children or make use of special education opportunities; recognize unusual behavior or symptoms which may indicate a need for health care. (3-0-21) 5

HSA 5511 CDA Practical Lab II—Advancing Physical and Intellectual Competence: Upon completion of this course, students should be able to: use the kind of materials, activities and experience that encourage exploring, experimenting, questioning, that help children fulfill curiosity, gain mastery, and progress toward higher levels of achievement; recognize and provide for the young child's basic impulses to explore the physical environment and master the problems that require skillful body coordination; increase knowledge of things in their world by stimulating observation and providing for manipulative-constructive activities; to use a variety of techniques for advancing language comprehension and usage in an atmosphere that encourages free verbal communication among children and between children and adults; assist the child to work gradually toward recognition of the symbols for designating words and numbers; promote cognitive power by stimulating children to organize their experience (as it occurs incidentally or pre-planned for them) in terms of relationships and conceptual dimensions; classes of objects, similarities and differences, comparative size, amount, degree; orientation in time and space, growth and decay, origins, family kinship, causality; provide varied opportunities for children's active participation, independent choices, experimentation and problem-solving within the context of structured, organized setting and program; to balance unstructured materials such as paint, clay, blocks with structured materials that require specific procedures and skills, and to balance the use of techniques that invite exploration and independent discovery with techniques that demonstrate and instruct; stimulate focused activities; observing, attending, initiating, carrying through, raising questions, searching answers and solutions for the real problems that are encountered and reviewing the outcomes of experience; to support expressive activities by providing a variety of creative art media and allowing children freedom to symbolize in their own terms without imposition of standards of realistic representation; to utilize support and develop the play impulse, in its varied symbolic and dramatic forms, as an essential component of the program; giving time, space, necessary materials and guidance in accord with its importance for deepening and clarifying thought and feeling in early childhood. (3-0-21) 5

HSA 5512 CDA Practical Lab III—Building Positive Self Concept and Individual Strength: Upon completion of this practical lab experience, students should be able to: provide an

environment of acceptance in which the child can grow toward a sense of positive identity as a boy/girl, as a member of the family and ethnic group, as a competent individual with a place in the child community; give direct, realistic affirmation to the child's advancing skills, growing initiative and responsibility, increasing capacity for adaptation, and emerging interest in cooperation, in terms of the child's actual behavior; demonstrate acceptance to the child by including the home language functionally in the group setting and helping to use it as a bridge to another language for the sake of extended communication; recognize individual differences in children's style and pace of learning and in the social-emotional aspects of their life situation and adjust the teacher-child relationship to the individual needs by using a variety of teaching methods and by maintaining flexible progressive expectations; recognize when behavior reflects emotional conflicts around trust, possession, separation, rivalry, etc., and adapt the program of experiences, teacher-child and child-child relationships, so as both to give support and to enlarge the capacity to face these problems realistically; assess special needs of individual children and call in specialized help where necessary; keep a balance for the individual child between tasks and experiences from which feelings of mastery and success can be enjoyed, and those other tasks and experiences which are a suitable and stimulating challenge, yet not likely to lead to discouraging failure; assess levels of accomplishment for the individual child against the background of norms of attainment for a developmental stage, taking into careful consideration individual strengths and weaknesses and considering opportunities the child has or has not had for learning and development. (3-0-21) 5

HSA 5513 CDA Practical Lab IV—Organizing and Sustaining the Positive Functioning of Children and Adults in a Group Learning Environment: Upon completion of this practical lab experience, students should be able to: plan the program of activities of the children to include opportunities for playing and working together and sharing experiences and responsibilities with adults in a spirit of enjoyment as well as for the sake of social development; create an atmosphere through example and attitude where it is natural and acceptable to express feelings, both positive and negative—love, sympathy, enthusiasm, pain, frustration, loneliness or anger; establish a reasonable system of limits, rules and regulations to be understood, honored and protected by both children and adults, appropriate to the stage of development; foster acceptance and appreciation of cultural variety by children and adults as an enrichment of personal experience; develop projects that utilize cultural variation in the family population as resource for the educational program. (3-0-21) 5

Humanities

HUM 1300 The Ascent of Man: This course is based on the Bronowski film series, and taught by a team of instructors representing several disciplines. Upon completion, students should be able to identify important scientific thinkers and their discoveries; be familiar with the influence of scientific discoveries on humanistic thinking; have an understanding of science as an important factor in human social and cultural evolution. (3-0) 3

***HUM 1301 Writers, Revolutionaries, and Big Brother:** Upon completion of this course, students should have read selected novels and essays about radical attempts in the 20th Century to change the social order while resisting totalitarianism. They should also be able to state the consequences of the revolutionary upheavals between the two World Wars as seen through the fiction and non-fiction of Orwell, Koestler and Malraux. *Prerequisite: COM 1305 or consent of department head. (3-0) 3

HUM 1305 Classic Fairy Tales: This course is designed to explore the fairy tale as a literary art form with distinct archetypal patterns. Upon completion, students should be able to analyze fairy tales from a structural, social, psychological and archetypal perspective. (3-0) 3

HUM 1314 The Novel: In this course, five works selected from American, British, French, Russian and Spanish literature are studied. Upon completion, students should: have an understanding of the novel as a literary genre and a knowledge of the cultural tradition out of which each work emerged; be able to differentiate between the literary methods and techniques of the respective writers; have discovered the novel as a representation of life. (3-0) 3

HUM 1319 Mythology: This course is a study of myths and legends, chiefly Greek and Roman. Upon completion of this course, students should: be familiar with the myths; be able to assess the influence of myths on art, custom and tradition; recognize the impact of myths on contemporary thought. (3-0) 3

HUM 1324 Science Fiction: In this course, science fiction is studied in historical perspective. Upon completion of the course, students should be able to: differentiate between science fiction and other literary genres; trace the themes and development of science fiction; recognize the influence of science fiction on contemporary culture. (3-0) 3

HUM 1329 Russian Literature and Culture: Upon completion of this course, students should be able to demonstrate a general knowledge of Russian culture as revealed in selected readings, lectures and audio-visual presentations. They should be able to demonstrate an awareness of geographical, historical, and political factors affecting life and the arts in the Soviet Union. (3-0) 3

HUM 1330 Women's Images in Fiction: This is a course designed to develop an awareness and understanding of women's changing roles in society as portrayed in fiction. Upon completion, students should demonstrate a knowledge of the development of women's social roles during the nineteenth and twentieth centuries through novelists' and short story writers' portraits of women. (3-0) 3

HUM 1500 Humanities—Classical to Medieval: Students should: become aware of the humanities as the record, in literature, art, sculpture, architecture, music, and philosophy, of answers by humankind to the fundamental questions of existence, and acquire an appreciation of them as such; be able to recognize the values held by humankind as they are reflected in the humanities from classical to medieval times, and assess the validity which the contributions of the past have for the present; be able to identify the major writers, musicians, artists, architects, and sculptors of the period studied; have some familiarity with their respective contributions to civilization. (5-0) 5

HUM 1501 Humanities—Renaissance to Present: Students should: become aware of the humanities as the record, in literature, art, sculpture, architecture, music, and philosophy, of answers by humankind to the fundamental questions of existence, and acquire an appreciation of them as such; be able to recognize the values held by humankind as they are reflected in the humanities from the Renaissance to the present, and assess the validity which the contributions of the past have for the present; be able to identify the important writers, musicians,

artists, architects, and sculptors of the period studied; have some familiarity with their major contributions to civilization. (5-0) 5

*HUM 2320 **Special Topics:** An advanced course in which students and an instructor select a topic for in-depth study. *Prerequisite: Approval of the sponsoring instructor and the department head. (3-0) 3

Insurance

INS 3340 **Principles of Risk and Insurance**: Upon completion of this course, students should be able to: describe the basic concepts of risk including its relationship to probability theory and the law of large numbers; discuss the relationship between risk and insurance; list and discuss the principles of risk management and the role of the risk manager; describe the nature and function of various types of insurance institutions; discuss the principles of insurance contracts. (3-0) 3

INS 3341 **Property and Casualty Insurance**: Upon completion of this course, students should be able to: describe the legal basis of insurance and be able to discuss the significance of insurable interest, indemnity, material fact and concealment; list the principles and conditions for the following types of insurance: marine insurance, standard fire insurance, inland marine insurance; discuss the purpose and intent of comprehensive general liability insurance, automobile insurance and automobile financial laws; describe crime insurance and suretyship; list and discuss the various multiple line coverages and commercial property forms. (3-0) 3

INS 3342 **Life and Health Insurance**: Upon completion of this course, students should be able to: describe the principles of life and health insurance, the types and uses of annuities and the uses of life insurance and methods of settlement; differentiate between gross and net premiums; discuss the concept of cash surrender value; analyze and interpret insurance company financial statements; list the types and categories of health insurance. (3-0) 3

*INS 3354 **Fire Insurance**: Upon completion of this course, students should be able to interpret in layman's terms the 165 lines of the Standard Fire Policy as well as other property policies that include fire coverage. They should also be able to work mathematically various co-insurance problems. *Prerequisite: INS 3340. (3-0) 3

*INS 3355 **Casualty Insurance**: Upon completion of this course, students should be able to read and explain in layman's terms each of the various casualty policies. They should also be able to calculate and explain the difference in premiums when deductibles are used and to increase coverages. *Prerequisite: INS 3340. (3-0) 3

INS 4200 **NASD Series 22 Review**: Upon successful completion of this course, the student should be able to describe the life cycle of a Tax Advantage Investment; evaluate Tax Advantage Investments such as Real Estate, Oil and Gas, Equipment Leasing, Agriculture, Coal, Exotics, Taxation; determine client fit; explain the applicatory Federal Securities Regulations including Securities Act of 1933 and Securities Exchange Act of 1934. The student should also be prepared to pass Series 22 Exam on Direct Participation Programs. Students should register for the Series 22 Exam before taking this course. (2-0) 2

INS 4201 **Part 1—Principles of Life and Health Insurance:** Part 1 is designed to acquaint students with the basic features of life and health insurance and annuity products. Upon completion of this course, students should be able to: list the elements of an insurable risk; define the basic life, health and annuity products; explain premium calculations and reserves; describe the major clauses in a life policy. Also, students should be able to pass the FLMI Part 1 exam. (2-0) 2

*INS 4202 **Part 2—Life and Health Company Operations:** Part 2 focuses on the business organization of the insurance industry. Upon completion of this course, students should be able to: differentiate between stock and mutual insurers, fraternal societies, savings banks and governmental plans; explain the following functions of a company: actuarial, marketing, underwriting, policy owner service, legal investment and accounting. Students should also be able to pass the FLMI Part 2 exam. *Prerequisite or Corequisite: INS 4201. (2-0) 2

*INS 4203 **Part 3—Legal Aspects of Life and Health Insurance:** The basic features of the legal environment which affect a life insurance company's products and operations are presented in Part 3. Upon completion of this course, students should be able to: distinguish between constitutions, case law and statutes; recognize valid, void and voidable contracts; discuss the basic principles of agency law; describe the formation of a life contract; describe actions and defenses of contesting the contract; explain the legal effect of policy loans; describe the law of wills, interpleader, rescission and reformation. Students should also be able to pass the FLMI Part 3 exam. *Prerequisite: INS 4202. (2-0) 2

*INS 4209 **Part 9cl—Life and Health Insurance Claims:** The purpose of this preparatory course is to familiarize students with the medical, legal and organizational aspects of claim administration. Upon completion of this course, students should be able to: use basic medical terminology properly; describe the claim administration process and how it is managed; list general claim considerations of all types of life and health policies; explain how life insurance proceeds are distributed. Students should also be able to pass the FLMI Part 9cl exam. *Prerequisite: INS 4202. (2-0) 2

*INS 4210 **Part 9gi—Group Insurance:** This preparatory course examines the development, technical aspects and administration of group life and health insurance coverages. Upon completion of this course, students should be able to: describe the background, characteristics, forms, ratings, underwriting and administration of group life and health plans; list other forms of group insurance including government insurance programs. Students should also be able to pass the FLMI Part 9gi exam. *Prerequisite: INS 4202. (2-0) 2

*INS 4211 **Part 9li—Life Insurance Investments:** The purpose of this preparatory course is to familiarize students with the types of investment media used by insurance companies and with the policies and practices of investment management in varying economic environments. Upon completion of this course, students should be able to: describe a financial analysis, investment policies of a life insurer, kinds of mortgages, alternatives to mortgages; define real estate appraisal methods; explain managing investment techniques, the legal aspects of mortgages and how mortgages are administered. Students should also be able to pass the FLMI 9li exam. *Prerequisite: INS 4202. (2-0) 2

INS 4280 **NASD Series 6 and 63 Review:** This course is designed as a review course for persons taking the NASD Series 6 and 63 Exams. Upon successful completion of this course,

students should be able to pass both national exams. It is suggested that students register for Series 6 and 63 exams before taking this course. (2-0) 2

INS 4294 General Insurance Part I—Introduction: This is the first course in a series which when completed qualify students to take the licensing exam given by the Department of Insurance for insurance agents. Upon completion of this course, students should be able to: identify the types of risk and how to apply the risk management concepts to said risks; discuss the various types of insurance and the functions of insurance companies; interpret the various laws and regulations affecting the insurance industry. (2-0) 2

***INS 4295 General Insurance Part II—Life, Accident and Health:** A continuation of INS 4294. When completed with INS 4294, this course qualifies the student to take the licensing exam required for Life, Accident and Health Insurance agents. Upon completion of this course, students should be able to: discuss the exposures, types, policy provisions and practices of life, accident and health insurance; interpret the regulations and laws specifically applying to life, health and accident agents; describe the various social insurance plans. *Prerequisite: INS 4294. (2-0) 2

***INS 4296 General Insurance Part III—Fire and Casualty:** A continuation of INS 4294. When completed with INS 4294, this course qualifies students to take the licensing exam required for Fire and Casualty agents. Upon completion of this course, students should be able to discuss and explain the various lines for fire and casualty insurance such as: automobile, marine, inland marine, general liability, worker's compensation, commercial fire, home owner's, crime and umbrellas. Students should also be able to: explain the functions of government sponsored insurance such as FAIR plans and BEACH plans; interpret the regulations and laws specifically applying to fire and casualty agents; discuss the forms for the various types of insurance. *Prerequisite: INS 4294. (2-0) 2

***INS 4297 General Insurance Part IV—Adjusters:** Upon completion of this course, students should be able to: describe the legal basis of contracts and claims; discuss the elements and purpose of negligence, principle of single recovery, *res gestae*, family purpose doctrine and the presumptions of *res ipsa loquitur* and *respondent superior*; list and discuss the principles of torts; describe and discuss the art of investigation and interviews; list the principles and describe the nature and function of negotiations, arbitration, settlement and law suits; list and discuss various medical reference sources, medical terminology and diagnostic procedures. *Prerequisite: INS 4296. (2-0) 2

INS 4315 Personal Risk Management amd Insurance I (HS 315): This course is designed particularly for multi-line agents. Upon completion of this course, students should be able to: identify and describe personal loss exposures; explain all parts of the various homeowners and auto insurance forms; explain other property and liability forms; list and explain social insurance programs, individual health insurance and group health insurance. Further, students should be able to pass the HS315 Exam. (3-0) 3

INS 4316 Personal Risk Management and Insurance II (HS 316): This course is a continuation of INS 4315. Upon successful completion, students should be able to: explain in detail to the satisfaction of a consumer the various types of life insurance; participate in retirement income planning; describe the types and uses of investments; explain the business uses of life and health insurance; participate in estate planning. Further, students should be able to pass the HS 316 exam. (3-0) 3

INS 4317 Multiline Insurance and Operations (HS 317): This course is designed particularly for multiline agents. Upon successful completion of this course, students should be able to: list the elements of a contract and apply them to factual situations; interpret insurance ocntracts; distinguish agency from other relationships; define the various types of authority; list the various ways the agency relationship can be terminated; recognize the more common intentional torts and negligence; explain the prima facie case for each; evaluate the defense available; describe the various types of damages; explain the underwriting principles of property, liability, health and life insurance. Further, students should be able to pass the HS 317 exam. (3-0) 3

INS 4320 Financial Services—Environment and Professions (HS 320): This introductory course sets the stage for CLU and ChFC programs by providing an overview of the environment in which financial services professionals assist clients in meeting their financial counseling and planning needs. Upon completion of this course, students should be able to: describe consumer needs for comprehensive financial counseling and planning; explain the financial planning process; use effective communications skills and techniques in financial planning; gather client information in the financial planning process; discuss the standard of professionals and ethics; describe the relationships among professionals in financial services, the financial services markets and institutions. Also, students should be able to pass the HS 320 exam. (3-0) 3

INS 4321 Income Taxation for Financial Planning (HS 321): This preparatory course provides coverage of the federal income tax system with particular reference to the taxation of life insurance and annuities. Students should be able to explain the way income tax laws apply to transactions of individuals and businesses and their importance to financial services professionals. They should also be able to pass the HS 321 exam. (3-0) 3

INS 4322 Financial Planning Economics (HS 322): This preparatory course is designed to explain the basic economics, principles and institutions, an understanding of which is necessary for an appreciation of alternative explanations of and alternative solutions for the more common economic problems found in private and government sectors. Upon completion of this course, students should be able to describe the price system and the market economy, the circular flow of national income and product; the determinants of monetary policy, unemployment, and inflation and stabilization policy. Also, students should be able to pass the HS 322 exam. (3-0) 3

INS 4323 Financial Statement Analysis—Individual Insurance Benefits (HS 323): This is the first course in the CLU and ChFC programs providing coverage of products, tools and techniques. Upon completion of this course, students should be able to assess a client's financial condition properly through analysis of financial statements. They should be able to describe various types of individual insurance coverages available for meeting life, health, personal property and liability needs. They should also be able to pass the HS 323 exam. (3-0) 3

INS 4324 Insurance Environment and Operations (HS 324): Financial services professionals must understand the legal rights and obligations of the policy owner and the insurance company before and after the policy is issued. Upon completion of this course, students should be able to explain the legal

aspects of contract formation, policy provisions, assignments, ownership rights, creditor rights, beneficiary designations, dispositions of life insurance proceeds and life insurance agency. They should also be able to describe the various company types, organization, operations and regulations. They should also be able to pass the HS 324 exam. (3-0) 3

INS 4325 Group Benefits and Social Insurance (HS 325): It is important that financial services professionals understand the benefits provisions and the advantages and limitations associated with both group insurance and social insurance as methods for meeting economic security needs. Upon completion of this course, students should be able to analyze group insurance benefits, including the regulatory environment, alternative funding as well as various governmental programs related to death, old age, unemployment and disability. They should also be able to pass the HS 325 exam. (3-0) 3

INS 4326 Pensions and Other Retirement Plans (HS 326): This course emphasizes planning for retirement income and for maximum tax benefit for employees and business owners. Upon completion of this course, students should be able to: distinguish qualified and non-qualified deferred compensation plans; design a qualified pension plan, profit-sharing plan and other qualified plans; explain the income and estate tax aspects. They should be able to explain individual retirement plans, tax deferred annuities and non-qualified deferred compensation plans. Students should be able to pass the HS 326 exam. (3-0) 3

INS 4327 Employee Benefits (HS 327): It is important that students in financial planning understand the benefit provisions and the advantages and limits associated with social insurance, group insurance and retirement plans. Upon completion of this course, students should be able to: design employee benefit plans for providing security with respect to the economic problems resulting from death, old age, unemployment and disability; analyze group insurance benefits and describe basic features of pension plans, profit-sharing plans, other retirement plans and deferred compensation agreements. Students should also be able to pass the HS 327 exam. (3-0) 3

INS 4328 Investment Principles and Their Application to Personal Finance (HS 328): Effective financial planning requires that the investment be selected that meets personal objectives and is consistent with personal risk preference. Upon completion of this course, students should be able to: explain the various aspects of investment principles and their application to personal finance; describe yields, limited income, securities, investment markets; describe how common stocks and real estate are valued; define mutual funds, variable annuities; find tax sheltered investments and explain the principles of personal portfolio management. They should also be able to pass the HS 328 exam. (3-0) 3

INS 4329 Wealth Accumulation Planning (HS 329): Upon completion of this course, students should be able to: explain the principles of real estate investment and taxation; describe the fundamentals of tax-sheltered and tax-incentive investments with emphasis on major tax investment and organizational characteristics of real estate, oil and gas, agricultural, and equipment-leasing limited partnership; plan for a living estate within a framework of accumulation and retirement planning. Students should also be able to pass the HS 329 exam. (3-0) 3

INS 4330 Estate and Gift Tax Planning (HS 330): The estate and gift planning process includes an understanding of the tax consequences of various estate planning devices. Upon completion of this course, students should be able to: describe the nature, valuations, transfer, administration and taxation of property; explain the unified estate and gift taxation, the marital deduction, use of life insurance in estate planning, and other estate planning devices. Students should also be able to pass the HS 330 exam. (3-0) 3

INS 4331 Planning for Business Owners and Professionals (HS 331): Upon completion of this course, students should be able to describe and explain: tax and legal aspects of organizing a business, problems in continuing a business after an owner's death and the insured buy-sell agreement; retirement of a business owner, including estate planning and "estate freezing" techniques; lifetime dispositions and the use of installment sales and other methods of business uses of life and health insurance for the benefit of business owners; disability buy-sell agreements; key employee life and health insurance plans; and split-dollar life insurance plans; business uses of property and liability insurance. Students should also be able to pass the HS 331 exam. (3-0) 3

INS 4332 Financial and Estate Planning Applications (HS 332): A case course aimed at both integrating the various techniques, tools and products covered in earlier courses in the chartered financial consultant program with the financial planning process outlined in INS 4320 (HS 320) and giving students practical application in analyzing and solving realistic financial problems of individuals and businesses. Upon completion of this course, students should be able to apply the skills learned in the preceeding courses to cases ranging from simple fact patterns and basic documents to complex situations involving not only personal financial problems but also financial problems associated with businesses and business ownership. Students should also be able to pass the HS 332 exam. (3-0) 3

***INS 4354 Professional Ethics:** Upon completion of this course, students should be able to identify and list the elements of the crimes most often committed by persons in the insurance industry, as well as understand the meaning of insurance being a "service industry." Students should also be able to identify ethical and non-ethical behavior from various scenarios given. *Prerequisite: INS 3340, INS 3354, INS 3355. (3-0) 3

INS 4361 Automobile and Commercial Auto Rating: Upon completion of this course, students should be able to use the appropriate rate books and rate various automobile insurance coverages. (3-0) 3

INS 4362 Fire, Dwelling and Homeowners Rating: Upon completion of this course, students should be able to use the appropriate rate book and rate the various fire policies, dwelling policies and homeowners policies. (3-0) 3

INS 4363 Businessowners Rating: Upon completion of this course, students should be able to use the appropriate rate book and rate the various business owners' policies. (3-0) 3

INS 4364 General Insurance Rating: A one quarter survey course of rating insurance policies. Upon completion of this course, students should be able to describe class rating, schedule rating, retrospective rating and experience rating. Also, students should be able to make basic use of various rate books. (3-0) 3

INS 4370 General Liability, SMP Rating: Upon completion of this course, students should be able to use the appropriate rate book and rate various general liability and SMP policies. (3-0) 3

INS 4371 **Worker's Compensation Rating:** Upon completion of this course, students should be able to use the appropriate rate book and rate worker's compensation policies. (3-0) 3

*INS 4384 **Insurance Law:** Upon completion of this course, students should be able to apply contract law principles to insurance, discuss waiver, estoppel and misstatement of material facts, as well as fraud and concealment. They should also be able to interpret the meaning of various parts of insurance contracts. *Prerequisites: BUS 2304 and BUS 2305. (3-0) 3

*INS 4394 **Claims Settlement:** Upon completion of this course, students should be able to: take recorded statements and oral statements from witnesses, claimants and witnesses; obtain documentation of claims; value claims and negotiate settlements with policy holders, claimants and attorneys. *Prerequisites: INS 4296, LEX 4321 and LEX 4431. (3-0) 3

INS 4400 **Disability Income Training Course (LUTC):** This is one of a series of preparatory courses for the LUTCF. Upon successful completion of this course, students should have the skills to enter the disability income market with knowledge and confidence. They should be able to describe the market opportunities, how to get extra sales, use field-proven methods to close sales of life and disability income, describe the business coverages and advantages, and turn objections around. Case studies will be used. Upon successful completion of this course, students will earn 60 Study and Practice Equivalents toward the LUTCF. (4-0) 4

INS 4401 **NASD Series 7 Review:** This course is designed to prepare individuals to take the NASD Series 7 Exam. Upon successful completion of this course, students should be able to: describe the various equity markets; explain the types of equities and how they differ; calculate conversion parity; describe the tax advantages of various investments; read a consolidated tape; describe how orders work; explain how puts and calls work; discuss the rules applying to client accounts; explain how margins work and how to calculate transactions in margin accounts; define short sales; discuss the economics that affect the equities market; complete a security analysis; read the financial news; calculate financial ratios; describe the taxation of securities transactions; read and understand applicable federal law and NASD regulations. Students should be able to pass Series 7 Exams. (4-0) 4

INS 4404 **Financial Planning Skills (LUTC):** Another in the series of Life Underwriters Training Courses. Upon successful completion of this course, students should be able to: identify financial planning prospects; develop prospecting and approach tehniques; understand legal requirements and his/her responsibility to clients and clients to agents; define and understand the agent's role; characterize the elements of a balanced financial plan; identify the impact of taxes on investment alternatives; use the IRS Form 1040 as a sales and learning tool; determine best use of IRA/Keogh Thrift/403b trusts; incorporate alternative financial tools; read and interpret financial news and statements; identify impediments to plan implementation; utilize the concept of the financial planning team; use the course's one-page visual illustrations and sales tracks. (4-0) 4

INS 4700 **Advanced Sales Training Course (LUTC):** Another in the series of Life Underwriters Training Courses. Upon successful completion of this course, students should be able to sell with confidence in the more sophisticated advanced markets which include advanced estate planing, business insurance, and employee benefit plans. Successful completion of this course earns 120 Study and Practice Equivalents towards the LUTCF. (7-0) 7

INS 4701 **Personal Insurance Training Course (LUTC):** Another in the series of Life Underwriters Training Courses. Upon successful completion of this course, students should have obtained the knowledge to make sales and develop confidence. Further. they should be able to: describe what makes a successful agent in the life industry; apply the total needs approach and dominant needs approach to selling; describe the value of life insurance ownership; use the positive ingredients of the sale; and compare new products. Successful completion of this course earns 120 Study and Practice Equivalents toward the LUTCF. (7-0) 7

INS 4702 **Business Insurance Training Course (LUTC):** Another in the series of Life Underwriting Training Courses. Upon successful completion of this course, students should be able to: pinpoint and solve problems of business owners and key executives; describe how the magic of life insurance satisfies both business purposes and estate planning needs; be able to communicate effectively and confidently with business executives. Topics covered include business markets, ownership, death and money problems, taxes and tax-related sales, key executives, business continuation, disposition of property and sales tracks. Successful students in this course earns 120 Study and Practice Equivalents towards the LUTCF. (7-) 7

Interior Design

EDN 4200 **Interior Decoration for the Home Owner:** Upon completion of this course, students should be able to plan a personal home interior emphasizing the following areas: convenience, comfort and beauty, furniture and furnishings arrangement. (1-2) 2

EDN 4201 **Color Schemes for Interior Design:** Students will work from home plans in solving everyday color problems. The emotional, thermal and optical effects of color arrangements for interiors will be studied. Students should be able to plan and develop a color scheme for an interior, working with existing colors or working out a completely new color scheme. (1-2) 2

*EDN 4202 **Thesis:** Students will plan and develop a professional portfolio based on work done during the preceding five quarters. Students will be involved in redoing some work/matting and where necessary develop new projects which will help them focus their portfolio on specific job interest. *Prerequisite: EDN 4415. (0-4) 2

EDN 4204 **Survey of Period Interiors:** Upon successful completion of this course, students should be able to recognize major furniture styles, including Louis XIV, Empire, Queen Anne, Sheraton, and selected modern styles. (2-0) 2

EDN 4210 **Antique Furniture and Furnishings:** Students will study antique furniture and furnishings and will explore their use in contemporary interiors. Students will be exposed to antiques from a consumer's point of view and will develop basic evaluating skills that can be used to determine a personal value of antiques in general. (2-0) 2

EDN 4300 **Survey of Interior Design:** Students will acquire a general understanding of the nature and scope of interior design as a profession, contrasting and comparing different specializations within the field of interior design. (3-0) 3

*EDN 4301 **Practical Problems in Interior Design I:** Students will develop their personal interior design projects with emphasis on space planning, color and correct use of interior materials. Complete visual presentations with accurate costs will be produced. *Prerequisite: EDN 4200, EDN 4201. (2-2) 3

*EDN 4307 **Survey of Materials:** Students will survey natural and man-made fibers and materials currently available and should be able to select the proper material for a specific application using the following criteria: overall quality, price, durability, color, and material from which the product is constructed. Materials covered: rugs and carpets, furniture, ceramic tile, paint, wallpaper and wall coverings, hardware, textile products, glass and building materials. *Prerequisite: EDN 4414. (1-4) 3

*EDN 4310 **Design Sketching:** Upon completion of this course, students should be able to: use drawing skills for effective communication; produce presentation sketches, point of purchase sketches, and idea development sketches as associated with the design process; use a variety of media appropriately on different surfaces and use "blueprint" materials and equipment to reproduce their drawings. *Prerequisite: ART 1405. (0-6) 3

EDN 4316 **Period Furniture and Furnishings I:** Upon completion of this course, students will be able to recognize, identify and describe the major period styles in furniture and furnishings and their influence on contemporary design. Covers the period from Egyptian through Louis XIV. (3-0) 3

*EDN 4317 **Period Furniture and Furnishings II:** Upon completion of this course, students will be able to recognize, identify and describe the major period styles in furniture and furnishings and their influence on contemporary design. Covers the period from Louis XIV through contemporary. *Prerequisite: EDN 4316. (3-0) 3

EDN 4320 **Introduction to Textiles:** Upon completion of this course, students will be able to identify major categories of fibers and weaves; describe contemporary machine weaving methods; describe contemporary fabric finishing psocesses; and describe and identify contemporary fabric printing methods. (3-0) 3

EDN 4390 **Independent Study:** This course provides the opportunity for the individual student or group to work beyond the limits of the regular interior design course offerings on self-determined objectives, utilizing the resources of the Art Division. (0-6) 3

*EDN 4400 **Professional Practices and Procedures:** Students will study current business practices in the field of interior design. Upon completion of this course, they should be able to write and design an initial contract form, a letter of agreement, prepare a purchase order, figure wholesale discounts, and do simple job estimating. *Prerequisite: EDN 4415. (2-4) 4

*EDN 4404 **Interior Presentation:** Students will develop technical skill in applying elements that comprise the interior environment: fabric, furniture, rock, masonry, foliage, etc. They will make presentations of designs in simulated designer-clientele relationships and should be able to construct and present simple interior design projects in a professional manner, preparing fabric and material collages and room layouts in ink and color. *Prerequisite: ARC 3434 and ART 1426. (2-4) 4

*EDN 4406 **Contemporary Interiors:** Students will study current techniques in designing interiors for commercial and industrial buildings and will learn to recognize and anticipate changing needs. They should be able to analyze and make recommendations concerning interior design solutions befitting 20th century contract interiors. *Prerequisite: EDN 4415 and ARC 3304. (2-4) 4

*EDN 4414 **Applied Problems Studio I:** Students will explore fundamentals of interior design, space planning, convenience, function, and visual effects and will complete planned problems to achieve workable and practical solutions to current needs for the single dwelling. They will prepare graphic solutions in two and three dimensional form. *Prerequisite: ARC 3303, ARC 3334 and ART 1426; Corequisite: EDN 4404. (2-4) 4

*EDN 4415 **Applied Problems Studio II:** Students will apply knowledge and skills from EDN 4414 to advanced solutions to special space problems, preparing presentations and complete specifications. *Prerequisite: EDN 4414 and ARC 3304. (2-4) 4

*EDN 4416 **Applied Problems Studio III:** Students will investigate, plan and execute interior designs for a cross-section of current interiors and should be able to solve actual complex interior design problems including accurate specifications and construction details. *Prerequisite: EDN 4415. (2-4) 4

Italian

ITA 1600 **Elementary Italian I:** Students should recognize native patterns of speech in elementary Italian as well as acquire proficiency in aural comprehension, reading comprehension and writing skills. They should be able to read, write, speak, and comprehend spoken Italian on the elementary level of salutation; the present and past tenses; reflexive verbs, nouns, pronouns, and adjectives; numbers; time expressions; and idiomatic expressions. They should also be able to explain the basic cultural patterns of everyday living in Italy, such as schools, leisure time activities, and general geography. (5-2) 6

*ITA 1601 **Elementary Italian II:** Students will build upon the native patterns of speech they learned In Elementary Italian I to acquire greater proficiency and increased sophistication in aural comprehension, reading comprehension, writing and speaking skills. Students should be able to recognize and use all types of pronouns—indirect object, indefinite, double object, disjunctive, possessive and *ci* and *ne* both indefinite and possessive adjectives; the imperative, the imperfect tense and its use in comparison with the *passato prossimo* and the *trapassato;* the future with its uses; the present conditional. *Prerequisite: ITA 1600 or equivalent. (5-2) 6

*ITA 2600 **Intermediate Italian I:** Students will use the native patterns of speech learned in ITA 1601 and will be able to recognize and use the subjunctive in the present, past and future tenses. They will also be able to recognize and use the conditional perfect, the *passato remoto,* and the passive voice. They will read and be able to explain short essays in Italian describing the political, theatrical, musical and technical life of modern Italy. Prerequisite: ITA 1601 or equivalent. (5-2) 6

Journalism

JOU 1300 **News Writing:** Upon completion of this course, students should: know the ethics of journalism and the basic press law with respect to libel and privacy; be able to use the information gathering process to write and edit news stories for print media; analyze the publisher-editor-writer-audience relationship. (2-3) 3

Law Enforcement Technology

PSC 3303 **Motor Vehicle Laws of North Carolina:** Upon completion of this course, students should be able to apply the

provisions of North Carolina General Statute Chapter 20 toward its intended purpose: to protect the lives and property of persons using the streets and highways of North Carolina. (2-2) 3

PSC 3500 Introduction to Criminology: Upon completion of this course, students should be able to identify and describe: the major theories of crime causation; the major crime prevention programs; the major treatment programs; identify the major researchers in the field of criminology. (5-0) 5

PSC 3501 Introduction to Law Enforcement: Upon completion of this course, students should be able to: identify at least 80 major concepts related to the history of law enforcement; identify the purpose of at least 25 law enforcement agencies operating in North Carolina; from a list of at least 18 specific crimes, identify the law enforcement agency with jurisdiction; recognize at least 34 current practices of law enforcement agencies and/or personnel; identify the purpose of at least 10 federal law enforcement agencies. (5-0) 5

PSC 3504 Crime Scene Technology: Upon completion of this course, students should be able to: protect life and property at a crime scene; protect, preserve and photograph a crime scene; search the crime scene for evidence; maintain chain of custody in handling of physical evidence; demonstrate proficiency in the use of specialized equipment in collecting, identifying and processing physical evidence. (4-2) 5

PSC 3510 Criminal Law: Upon completion of this course, students should have had a practical approach to the substantive law and should have a sound introduction to legal theory; have a basic knowledge of the common law; identify and define elements of crimes; understand how basic concepts function to determine the law; be able to identify and define legally recognized defenses. (5-0) 5

PSC 3514 Police Organization and Administration: Upon completion of this course, students should be able to: depict the organization of a police agency within the guidelines of sound organizational principles; recognize effective administrative functions; formulate a budget; write a staff study, emergency plan, standard operating procedure and a general order. (5-0) 5

PSC 4310 Self-Defense and Weaponry: Upon completion of this course, students should be able to demonstrate: firing proficiency with the police service revolver, including prescribed safety procedures; self-defense procedures utilizing police methods; proficiency in the use of the baton and proper utilization of handcuffs. (1-4) 3

PSC 4312 Organized Crime: Upon successful completion of this course, students should be able to identify organized crime families in the U.S.; recognize the effects of organized crime; identify the agencies and efforts utilized to reduce the impact of such crime in this country; identify successful efforts in fighting organized crime. (3-0) 3

PSC 4501 Constitutional Law: Upon completion of this course, students should be able to identify, define and apply statutory rules and standards in the area of arrest, search and seizure; and possess an understanding of the landmark cases under the state and federal constitutions, particularly the Fourteenth Amendment. (5-0) 5

PSC 4503 Law Enforcement Psychology: Upon completion of this course, students should be able to: identify the most common psychological demands, affects and effects of the law enforcement function on the officers and their families; identify the most common procedures of selection, retention and promotion of police officers; identify major methods of obtaining information; identify the major methods employed in deception; identify common principles of dealing with and controlling people; identify the behavioral characteristics of abnormal people commonly encountered by police officers; know the remedial services that are available. (5-0) 5

***PSC 4504 Criminal Procedure and Rules of Evidence:** Upon completion of this course, students should be able to: display and demonstrate workable knowledge and skill in criminal procedure and rules of evidence, and demonstrate a generally desired and accepted practice of courtroom decorum. This includes: North Carolina Code of Pretrial Criminal Procedure, Appellate Review, the role of the presiding judge, judicial notice, impeachment and corroboration, examination, competency and privilege in general, transactions with persons since deceased or insane, circumstantial evidence, character, real evidence, evidence illegally obtained, opinion, expert testimony, hearsay, admissions, confessions, burden of proof and presumptions. *Prerequisite: PSC 3510, PSC 4501, or departmental consent. (5-0) 5

PSC 4505 Criminal Investigation: Upon completion of this course, students should be able to: maintain an accurate notebook; define the accepted procedures for interviews, interrogations, admissions, confessions and written statements; define the accepted procedures for developing and maintaining informants; identify sources of information; define accepted procedures for undercover operations and surveillance; define accepted procedures for the investigation of specific offenses; define specific forensic procedures and applications; identify laws and case laws applicable to criminal investigation. (5-0) 5

***PSC 4506 Advanced Crime Scene Technology:** Upon completion of this course, students should be able to: sketch a mock crime scene; photograph a mock crime scene; process a mock crime scene for latent fingerprints; process a mock crime scene for biological fluids; process a mock crime scene for ballistics evidence; process a mock crime scene for trace evidence; be 100% complete in gathering physical evidence in a mock crime scene; process a mock crime scene for tool marks; prepare the physical evidence for transport to a crime lab; present, in a mock trial, all evidence found at the mock crime scene; withstand cross-examination in presenting evidence in mock trial. *Prerequisite: PSC 3504 or departmental consent. (4-2) 5

PSC 4510 Police Operations: Upon completion of this course, students should be able to: define the purpose of police patrols; define the types of patrol; define the types of communications; define the accepted procedures for: observation, perception, notetaking, report writing, identification and description of persons and property, field interrogation, stopping of vehicles and control of occupants, use of personal protective weapons, techniques and tactics by type of call; perform a stop and frisk; complete an affidavit and search warrant. (4-2) 5

PSC 4511 Administration of Justice: Upon completion of this course, students should be able to: construct a flow chart demonstrating the difference between the federal, state and local systems of criminal justice; identify and differentiate between the functions and responsibilities of law enforcement, courts and corrections; identify and define the philosophical basis for the existence of the various components of the criminal justice system; construct and demonstrate the feasibility of felony alert and disaster plans coordinating the units of the system. (5-0) 5

PSC 4520 Public Relations: Upon completion of this course, students should be able to: define the focus and overall purpose of public relations; list 25 positive benefits of effective public relations for criminal justice agencies; list 35 negative aspects of faulty public relations for criminal justice systems; define the power and influence of public opinion; identify major problems in public relations as related to the criminal justice mission; identify factors which foster effective and affective public relations; identify examples of conserving favorable public opinion; identify common ways of sampling public opinion. (5-0) 5

Learning Skills—Advancement Studies

EDU 9300 Effective Learning Skills: Upon completion of this course, students should be able to demonstrate college level techniques of effective study habits which include time management, listening and taking notes, mastering textbooks, concentrating and remembering, and taking exams; explain the use of College publications, the procedures for registration and for obtaining the benefits of the resources available at CPCC. (3-0) 3

Machinist

MAC 3201 Machine Operations for Engineering Technicians: Upon completion of this course, students should be able to: calculate speeds and feeds for lathes, milling machines and drill presses; layout, drill and tap holes to specified tolerances; describe the nomenclature of chucking and holding devices, cutting tools, and operating procedures for drill presses, lathes, milling machines and grinding machines; set up and operate lathes and milling machines; describe basic programming procedures for two-axis CNC machines. (1-3) 2

***MAC 3202 CNC Programming and Machining for Engineering Technicians:** Upon completion of this course, students should be able to: demonstrate a basic knowledge of numerical control and computer numerical control programming; produce a part program using the Numeridex Computer System; write a program for a CNC machining center to include linear interpolation, drilling, boring and pocket milling; MDI programs into CNC turning and machining centers. *Prerequisite: MAC 3201. (1-2) 2

MAC 5200 Precision Instrument Reading: Upon completion of this course, students should be able to: solve problems related to the machinists' field involving fractions and decimals; read basic 3-view projections; properly care for, read and use the following precision measuring instruments: steel rule, vernier caliper, vernier height gauge, micrometer, dial indicator, gauge blocks and fixed gauges. (2-0) 2

MAC 5201 Machine Shop Practices: Upon completion of this course, students should be able to: identify and use the basic hand tools and measuring instruments associated with the metal working trades; perform basic operations using a drill press, lathe, milling machine and grinding machine; remove broken studs and taps properly; state the uses of, and install helicoils; describe and use all appropriate safety procedures. (1-3) 2

MAC 5203 Blueprint Reading for Machinists I: Upon completion of this course, students should be able to: sketch multi-view drawings; interpret conventional lines and dimensions; interpret notes, thread notations, and welding symbols; make pictorial sketches; interpret basic drawings. (1-2) 2

***MAC 5204 Blueprint Reading for Machinists II:** Upon completion of this course, students should be able to: read and interpret industrial prints of a more complex nature; understand and interpret geometric tolerance symbols and true position dimensioning; sketch details and assemblies. *Prerequisite MAC 5203. (1-2) 2

***MAC 5205 Coordinate Measuring Machine Applications:** Upon completion of this course, students should be able to: describe the uses and functions of the coordinate measuring machine; program the machine; list and use proper command functions for measuring; edit programs and make changes when needed; measure parts for taper, perpendicularity, concentricity, roundness and flatness. *Prerequisite: MAC 5200 or permission of the Machinist program director. (1-2) 2

MAC 5300 Fundamentals of Computer Numerical Control Programming: Upon completion of this course, students should be able to: describe the principles involved in the operation of NC and CNC machines; translate information from prints into X and Z coordinate terms; compose a point to point positioning manuscript; compose a sequential manuscript for a two-axis CNC lathe; solve programming problems involving tool paths and pitch circles; position, adjust, set feed rates, operate and correct performances of a CNC training lathe during tape run. (3-0) 3

MAC 5303 Computer Numerical Control Machining Center Operations: Upon completion of this course, students should be able to: use proper safety procedures; set up tooling for the machining center; load programs and machine complex parts; use precision instruments; use proper insert tooling and state their uses in machining different types of materials; operate the main control panel and be able to MDI program into computer memory; establish point of origin and locate fixture properly; prove accuracy of program using block by block procedure. (2-3) 3

***MAC 5304 Computer Numerical Control Programming—Turning Center:** Upon completion of this course, students should be able to: describe the proper use and uses of inserted qualified tooling; determine proper speeds and feeds; describe the "G" codes and their applications for the turning center; manually set up and operate the turning center for CNC programs; write programs for straight and taper turning, turn radius and chamfers, O.D. and I.D. threading; convert M.D.I. to program computer on FANUC control; write programs for lathe capabilities; organize and edit programs. *Prerequisite: MAC 5300 or permission from Machinist program director. (2-2) 3

***MAC 5305 Computer Numerical Control Programming —Machining Center:** Upon completion of this course students should be able to: list codes and describe machine control words; write manuscript using canned drilling cycles, straight line linear interpolation, circular interpolation, close tolerance boring, and threading cycles; determine correct speeds and feeds; MDI programs into CNC controls; optimize and edit programs; prepare tapes to plot, prove, edit and produce parts on a machining center. *Prerequisite: MAC 5300 or permission from the Machinist program director. (2-2) 3

MAC 5306 Computer Numerical Control Turning Center Operations: Upon completion of this course, students should be able to: use proper safety procedures; set up tooling for the turning center; load programs and machine complex parts;

use precision instruments; use proper carbide insert tooling and state their uses in machining different types of materials; operate main control panel and be able to MDI programs into computer memory; load programs by tape to transmit programs from Numeridex to machine and back to terminal for storage; make tool offsets and set tooling to programmed point of origin; prove accuracy of new program by using block by block procedure. (2-3) 3

*MAC 5307 **Machine Tool Applications:** Upon completion of this course, students will have completed assigned projects using skills learned in prerequisite courses including the following: planning work for correct machining and ease of operation; using machine tools and hand tools in a proper and safe manner; using proper work habits. *Prerequisite: MAC 5311, MAC 5313, MAC 5422, MAC 5424. (0-9) 3

*MAC 5309 **Computer Assist Programming for Computer Numerical Control Machines:** Upon completion of this course, students should be able to: define points, circles, radii, bolt circles, cutter geometry with COMPACT II language; prepare manuscripts using COMPACT II language; discuss the proper use and applications of abbreviations and synonyms; describe the use of post processors; describe COMPACT II geometry statements; discuss the fundamentals of moving the tool with COMPACT II language; use the Numeridex computer assist programming equivalent. *Prerequisite: MAC 5310. (2-2) 3

*MAC 5310 **Computer Numerical Control Programming Applications:** Upon completion of this course, students should be able to: write complex programs for the turning and machining centers, key program with Numeridex System; edit programs for changes; plot part; and produce tapes for programs; produce fixturing for parts; load programs for Numeridex terminal; set up tooling and fixtures; produce complex parts on both turning and machining centers. *Prerequisite: MAC 5300, MAC 5304, MAC 5305, MAC 5303, MAC 5306. (2-2) 3

*MAC 5311 **Basic Lathe Operations:** Upon completion of this course, students should be able to: calculate the correct RPM's; state the reasons for correct speeds and feeds and select the proper speeds and feeds for assigned projects; use proper work holding devices; select proper lathe tools; calculate and identify standard tapers; determine proper thread depths; perform operations with prescribed accuracy for straight turning, knurling, threading (external), boring and tapering; use safe and proper techniques in all procedures. *Corequisite: MAC 5200. (1-6) 3

*MAC 5313 **Layout, Hand Tool, and Drill Press Procedures:** Upon completion of this course, students should be able to: identify different types of drill bits and taps and state the purpose of each; properly use hand tools normally used in machine shop work; use layout tools with prescribed accuracy; calculate correct drilling speeds; operate the drill press to drill, ream, countersink, counterbore, machine tap, layout and drill multiple holes. *Corequisite: MAC 5200. (1-6) 3

*MAC 5315 **General Machining and Maintenance:** Upon completion of this course, students should be able to: repair broken and/or worn machine parts; produce left-hand and double-lead threads, both internal and external; calculate proper depths; use thread wires for measuring depths of threads; produce concave and convex radii using the rotary table; produce typical machine parts; complete industrial grade projects. *Prerequisite: MAC 5311, MAC 5313, MAC 5422 and MAC 5424. (1-6) 3

*MAC 5320 **Calculations for Machinists II:** Upon completion of this course, students should be able to: discuss angular measurement in relation to blueprints and shop drawings; solve for unknown dimensions and angles using right-angle trigonometry and symmetry; explain the practical application in the Machinist trade of the Pythagorean Theorem; interpolate trigonometric functions from a table of such functions; use a sine-bar and gauge blocks to determine unknown measurements or angles; solve for unknowns using the Law of Sines and the Law of Cosines; apply angular measurement and right-angle trigonometry to shop calculations. *Prerequisite: MAC 5401. (3-0) 3

MAC 5401 **Basic Calculations for Machinists:** Upon completion of this course, students should be able to: apply the principles of addition, subtraction, multiplication and division to problems in the machinists' field; find direct and indirect ratios and proportions; read a ruler and micrometer accurately; apply geometric formulas toward thread calculations; manipulate fractional and decimal numbers; perform area and volume calculations; use angular and geometric measurements in problem solving; apply simple algebraic equations to work problems; discuss measurement using the metric system as well as the English system. (4-0) 4

*MAC 5422 **Basic Milling Operations:** Upon completion of this course, students should be able to: calculate proper speed and feed rate for milling cutters and state the importance of correct speed and feed selection; demonstrate proper and safe techniques with prescribed accuracy in face milling, shoulder milling, fly cutting and horizontal plain milling. *Corequisite: MAC 5200. (2-6) 4

*MAC 5424 **Grinding Machine Operations:** Upon completion of this course, students should be able to: describe grinding machine theory and practice; make proper abrasive selections; select appropriate speeds; demonstrate proper and safe techniques in operating with prescribed accuracy the horizontal surface grinder, and cylindrical grinder. *Prerequisite: MAC 5311, MAC 5422. (2-6) 4

Manufacturing Engineering Technology

ISC 3301 **Engineering Economic Analysis:** Upon completion of this course, students should be able to: state the concepts of engineering economic analysis; construct cash flow diagrams, evaluate different economic alternatives; discuss fixed, increment and sunk cost, depreciation capitalized cost, make economic choices using methods of present worth, equipment annual cost, IRR, ERR and MARR; perform replacement retirement and breakeven analysis; discuss value analysis and the effect of taxation on economic decisions. (2-3) 3

*ISC 3314 **Computer-Assisted Manufacturing (CAM):** Upon completion of this course, students should be able to: identify the components of a CAM system and define their use; use standard machine tool language and APT II to describe the geometry of machine parts; use a common data base for automatic programming of simple parts; manually program basic two and three dimensional machining operations; discuss the advantages of flexible manufacturing processes; and determine the tooling required for each machining process. *Prerequisite DFT 3316. (2-3) 3

*ISC 4304 **Production Planning:** Upon completion of this course, students should be able to: discuss production control

functions, types of production and control types and procedures; forecast and estimate future manpower, material and machinery needs; institute inventory procedures, prepare schedules utilizing production control boards; and dispatch and keep production moving. *Prerequisite MAT 3507 or departmental permission. (2-3) 3

*ISC 4305 **Plant Layout and Materials Handling:** Upon completion of this course, students should be able to: explain the three types of classic layouts; design a plant layout, based on the following: size, physical and chemical characteristics, quantity and variety of parts, products and materials, the nature, size and quantity of machines and equipment, the worker, waiting and service factor, office and employee facilities; select the proper fixed and nonfixed floor and overhead materials handling equipment, to move materials and products efficiently and economically. *Prerequisite: DFT 3404, MEC 3405 or departmental permission. (2-3) 3

*ISC 4307 **Introduction to Robotics:** Upon completion of this course, students should be able to: describe the function of industrial robots; identify the main components of robots; understand the principles of operation of the following robotic controls: hydraulic, pneumatic, electrical/electronic; analyze the motion of the robot arm; explain the basic concepts, components, and application of servo systems; program robots to perform selected operations; maintain, service and troubleshoot hydraulic, pneumatic and mechanical robotic equipment. *Prerequisite: MEC 4434, EDP 3405 or departmental permission. (2-3) 3

*ISC 4308 **Robotics/Automation:** Upon completion of this course, students should be able to: describe and select industrial robots for typical automated manufacturing applications; design and program a typical robotic pick and place application; understand concepts of robotic/automation work cells, Flexible Manufacturing Systems (FMS), Computer Assisted Manufacturing (CAM), and hard automation; identify and justify the most economical system above for a specific manufacturing process; identify components of work cells, FMS and hard automation; and identify manufacturing processes for increasing productivity through the application of automated maufacturing technology. *Prerequisite: ISC 4307, EDP 3405 or departmental permission. (2-3) 3

*ISC 4314 **Inspection and Quality Control:** Upon completion of this course, students should be able to: use non-precision measuring instruments; use precision measuring instruments; use comparison measuring instruments; use gages, gage blocks, surface plates and precision angular measuring instruments; use destructive and non-destructive testing methods to find the physical and mechanical properties of engineering materials; and use statistical methods of quality control. *Prerequisite: MAT 3707, MEC 3405 or departmental permission. (2-3) 3

*ISC 4316 **Process Planning:** Upon completion of this course, students should be able to: perform a dimensional and tolerance analysis of a product print, using tolerance charts; select and plan the process of manufacture and its sequence; and selec t the machine tool, standard and special equipment and tooling for the most economical manufacturing process. *Prerequisite: DFT 3405, MEC 3405 or departmental permission. (2-3) 3

ISC 4400 **Time and Motion Study:** Upon completion of this course, students should be able to: apply the general problem solving process to work methods design; construct activity charts; human and machine charts; apply the principles of mation economy as related to the use of the human body, the work place and the design of tools and equipment; conduct a time study, determine the rating factor and allowances and develop a time standard; use the MTM method to determine time standards; and conduct work sampling. (2-6) 4

Also see Mechanical Engineering Technology for other course descriptions.

Marketing and Retailing

MKT 1304 **Marketing I:** This course is the first of a two-part study of Marketing. Upon completion of this course, students should be able to: explain the importance of marketing in our economic system; explain the marketing concept and the environmental and technological factors' impact on this concept; describe buyer behavior from economic, psychological and sociological points of view; identify and classify marketing activities; distinguish among the various marketing research methods; classify products; explain product pricing and distribution strategies and their relation to the marketing process. (3-0) 3

*MKT 1305 **Marketing II:** Upon completion of Marketing II, the second of the two-part course, students should be able to: explain promotion, pricing and distribution and their place in the marketing process; recognize marketing's place in current society and discuss contemporary issues; explain the growth in and importance of international marketing as well as the significance of the balance of payments; explain a fully integrated marketing program; explain the significance of the computer as a tool in the marketing process; recognize career opportunities in marketing. *Prerequisite: MKT 1304. (3-0) 3

MKT 3204 **Cooperative Education I:** Upon completion of this course, students should be able to: perform with greater competence in the particular work-related skills involved in the specific job held; evaluate their own interest and performance in the given occupational field and their potential success and advancement in that occupation; assess realistically the general requirements and responsibilities of successful employment and evaluate their own capacity to comply with such demands; analyze the job market in their chosen career prior to entrance into that career as a full-time employee. (0-20) 2

*MKT 3205 **Cooperative Education II:** Upon completion of this course, students should be able to: perform with greater competence in the particular work-related skills involved in the specific job held; evaluate their own interest and performance in the given occupational field and their potential success and advancement in that occupation; assess realistically the general requirements and responsibilities of successful employment and evaluate their own capacity to comply with such demands; analyze the job market in their chosen career prior to entrance into that career as a full-time employee. *Prerequisite: MKT 3204. (0-20) 2

*MKT 3206 **Cooperative Education III:** Upon completion of this course, students should be able to: perform with greater competence in the particular work-related skills involved in the specific job held; evaluate their own interest and performance in the given occupational field and their potential success and advancement in that occupation; assess realistically the general requirements and responsibilities of successful employment and evaluate their own capacity to comply with such demands; analyze the job market in their chosen career prior to entrance into that career as a full-time employee. *Prerequisite: MKT 3205. (0-20) 2

*MKT 3314 Applied Retail Calculations: Upon completion of this course, students should be able to: maintain records; determine prices; compute reimbursement; prepare a sales check; compute time payments; compute employee discounts; effectively use cash register and prepare related reports; use inventory methods; and compute open-to-buy, stocks-to-sales ratios, and shipping costs from terms on invoices. *Prerequisite: FIN 3314. (2-4) 3

MKT 3320 Fundamentals of Selling: This course is designed to provide students with a general survey of the various careers in selling and provide a thorough study of the selling process from preparation to closing of the sale. Upon completion, students should be able to: collect proper data and prepare for a sales interview; conduct a successful sales interview including the approach, presentation, demonstration, meeting objections and closing; instill confidence and trust in the prospect by exhibiting confidence as a result of proper preparation. (3-0) 3

MKT 3330 Introduction to Textiles: Upon completion of this course, students should be able to: list and explain the physical properties of fibers; characterize and differentiate between major fiber groups; explain methods of fiber construction; differentiate between yarn types and explain their production; explain the methods used to add color and special finishes to fabrics. (3-0) 3

*MKT 4305 Advanced Selling Skills: This course is a follow-up course for MKT 3320 and teaches alternative selling skills. Upon completion of this course, students should be able to: develop strategic selling knowledge; plan methodically for a sale; focus on a dominant sales theme; use the cybernetic model; use the trait development plan; use persuasive strategies; apply decision theories to buyers' behavior; apply various prospecting methods; use planning aids; use alternative approaches; set objectives for a presentation; use visual devices in a presentation; understand the psychology of objections; customize a close; apply acceptable business ethics to sales situations. *Prerequisite: MKT 3320. (3-0) 3

MKT 4320 Retailing: Upon completion of this course, students should be able to: differentiate between various types of retailers; evaluate franchises, including the contract, possible locations and potential store functions and personnel; explain the buying function and role of resident buying offices; apply merchandise pricing principles and formulas; schedule and plan merchandise handling areas; explain and evaluate various store security methods; discuss the role and importance of retail advertising and plan a store promotional activity; identify display material and techniques; complete a retail sale; explain credit and collection procedures. (3-0) 3

MKT 4321 Advertising: This course is designed to instruct the usage of advertising as a marketing tool. Upon the completion, students should be able to develop an advertising plan based on marketing objectives for a specific product or service. This course excludes the implementation of creative strategies. (3-0) 3

MKT 4322 Purchasing: Upon completion of this course, students should be able to: define the purchasing function; describe purchasing's role in business; recognize the importance of quality assurance; explain the role purchasing plays in deciding to make or buy; discuss its relationships to other company departments; describe the importance of planning and forecasting; interpret the ethics of purchasing; develop the legal aspects of purchasing; explain the need for evaluating purchasing performance; describe EDP's usefulness in purchasing; detail the development of both the organization and personnel for purchasing; conduct purchasing computer simulation for retail firm; apply purchasing formulas and methods for cost analysis. (3-0) 3

*MKT 4325 Sales Management: Upon completion of this course, students should be able to: explain the organization and functions of territorial district, regional and company sales management; know the difference between various types of sales organizations and their objectives; plan and conduct a sales meeting; organize and conduct a customer product meeting; record and file an expense account; make sales forecasts. *Prerequisite: MKT 3320 or instructor permission. (3-0) 3

MKT 4340 Department Store Merchandising: Upon completion of this course, students will be able to: describe the buying function and its relationship to other functional activities in the business; describe the similarities and differences of the buyer's responsibilities in departmentalized stores, centralized chain offices and resident buying offices; identify the staff departments that service and support selling and sales promotion activities; identify the merchandising techniques and information sourcess that are used in determining what and how much to buy; identify criteria used in the selection of resources. (3-0) 3

*MKT 4354 Display and Design: Upon completion of this course, students will be able to: discuss the importance of display design as a visual merchandising medium and its use as a sales supporting activity; understand the basic principles and elements of design that are applicable to display design; differentiate between different types of displays, display organization, policies and procedures; discuss the display and design person's responsibilities and interrelationships with various departments; apply the physical elements of display compositions and arrangements. *Prerequisite: MKT 4320. (3-0) 3

MKT 4355 Channels of Distribution: This course is designed as an in-depth study of marketing channels and the appropriate choice of channels for distribution of various products. Upon completion of this course, students should be able to: define and apply channel management techniques, taking into consideration corporate objectives and environmental factors; design a channel for various products; understand logistics, sales and operation policies. Prerequisite: MKT 1305. (3-0) 3

MKT 4360 Supermarketing I: Upon completion of this course, students should be able to: trace the history of, depict the current status of, and describe future trends in the grocery industry; delineate and describe food distribution channels; explain the role of and reasonable expectations for profit margins; describe psychographically the supermarket customer; demonstrate a thorough working knowledge of the grocery department. (3-0) 3

*MKT 4364 Supermarketing II: Upon completion of this course, students should be able to: describe the functions of, draw a layout of, do a purchasing plan for, and hire personnel for, the meat, produce, dairy, frozen foods, bakery, deli, and front-end departments. *Prerequisite: MKT 4360. (3-0) 3

MKT 4365 Supermarket Law: Upon completion of this course, students should be able to: describe the basic components and mechanics of our legal system; explain requirements for compliance with EEOC regulations, unions, contracts and the laws affecting them; explain product liability and torts. (3-0) 3

*MKT 4374 Food Merchandising: Upon completion of this course, students should be able to: describe the relationship

between food merchandising and the consumer; explain buying's resultant effect on pricing; describe the effect and purposes of advertising, promotion, display and layout; demonstrate a working knowledge of regulations affecting food merchandising; explain the importance and methods for profit planning and control. *Prerequisite: MKT 4384. (3-0) 3

Mathematics

Prerequisites will be strictly enforced. Students who fail to provide the Mathematics Department with evidence of an acceptable mathematics background or of an adequte placement test score will not be allowed to register for mathematics classes.

MAT 1500 Mathematics for Modern Living: Students will recognize and use properties of logic and sets; classify and use numbers and sequences; find linear, area and volume measurements; use the metric system; find simple and compound interest and use percentage; use hand calculators; use computer terminology; solve equations; use ratio and proportion; graph linear equations; define and calculate probabilities and statistical measurements. Students are required to attend scheduled orientation and testing sessions. (5-0) 5

***MAT 1504 College Algebra I:** The first of a two course sequence in college algebra designed to provide the mathematical background for college work in fields other than mathematics, engineering or physical science. Students will state and apply the properties of the real number system; add, subtract, multiply and divide polynomials and rational expressions; factor; define and use integral and fractional exponents; simplify radicals, rationalize numerators and denominators; use scientific notation; solve first and second degree equations and inequalities in one variable; solve applied problems; perform basic operations with complex numbers; graph first degree equations and inequalities in the plane; find equations of lines and some conics. (Not applicable to mathematics, engineering or science majors.) Credit not given to students already having credit for MAT 1514. *Prerequisite: Placement examination or MAT 9510 or consent of the department head. (5-0) 5

***MAT 1505 College Algebra II:** The second of a two course sequence in college algebra designed to provide the mathematical background for college work in fields other than mathematics, engineering or physical science. Students will define, graph and use relations and functions; determine domain and range of functions; graph quadratic functions and functions containing radicals; determine the inverse of a function; define, graph and use exponential and logarithmic functions; use properties of logarithms; compute with logarithms using tables and calculators; solve systems of equations of two and three variables algebraically and with matrices; solve systems involving second degree equations; use determinants to solve systems of equations; solve systems of inequalities; use linear programming; find permutations and combinations; determine probabilities of events. (Not applicable to mathematics, engineering or science majors.) Credit not given to students already having credit for MAT 1514. *Prerequisite: MAT 1504 or consent of department head. (5-0) 5

***MAT 1514 Precalculus Mathematics I:** The first of a two course sequence designed to prepare students for the four quarter calculus sequence or additional work in mathematics. Students will state and use the basic properties of the real number system; add, subtract, multiply and divide algebraic expressions; factor; expand using the Binomial Theorem; solve first and second degree equations; define, graph and apply relations and functions; use straight lines and linear functions; solve polynomial equations of higher degree, solve linear and non-linear inequalities. *Prerequisite: Placement examination or MAT 1504 or consent of the department head; Corequisite: MAT 9511 or high school geometry or consent of the department head. (5-0) 5

***MAT 1515 Precalculus Mathematics II:** The second of a two course sequence designed to prepare students for the four quarter calculus sequence or additional work in mathematics. Students will solve systems of equations using algebraic, graphic and matrix methods; define, graph and apply exponential and logarithmic functions; define and apply trigonometric and circular functions; state and apply the addition and multiple angle formulas; prove identities; solve trigonometric equations; graph using symmetry, intercepts, asymptotes and excluded regions; state and apply the properties of the conic sections. *Prerequisite: MAT 1514 or consent of the department head. (5-0) 5

***MAT 1516 Introductory Calculus:** This is a brief treatment of the calculus for non-mathematics or non-engineering majors. Students will review functions and relations. They will be able to find limits; determine if a function is continuous; find derivatives of algebraic expressions by the definition; find derivatives by using differentiation techniques; differential implicit functions; find higher order derivatives; apply the derivative to find relative and absolute extrema; determine concavity and points of inflection; find differentials; evaluate definite and indefinite integrals; find areas by integration; differentiate and integrate exponential and logarithmic functions. *Prerequisite: MAT 1505 or MAT 1514 or consent of the department head. (5-0) 5

***MAT 1524 Analytic Geometry and Calculus I:** The first of a four-quarter unified sequence of calculus. (The four-quarter sequence is recommended for students in engineering, mathematics, the physical sciences, and students who need more than an introduction to calculus.) Students will study algebraic and trigonometric functions with regard to the concepts of limits, derivatives, continuity, implicit differentiation, the differential and Newton's method of root approximation; apply the derivative to find extrema, increasing and decreasing intervals, concavity and graphing; and solve related-rate problems. Computer techniques will be used where applicable. *Prerequisite: MAT 1515 and plane geometry or consent of the department head. (5-0) 5

***MAT 2504 Analytic Geometry and Calculus II:** The second of a four-quarter sequence. Students will evaluate definite and indefinite integrals with regard to algebraic, exponential, trigonometric, logarithmic, hyperbolic and inverse functions; state and apply the Fundamental Theorem of calculus; apply calculus techniques to finding area, work, power, energy and exponential growth and decay; solve integration problems by the techniques of substitution, parts, trigonometric substitution, partial fractions and miscellaneous substitutions; use integral tables; use numerical integration, summation notation and approximations to area. Computer techniques will be used where applicable. *Prerequisite: MAT 1524 or consent of department head. (5-0) 5

***MAT 2505 Analytic Geometry and Calculus III:** The third of a four-quarter sequence. Students will apply calculus techniques to finding volume, arc length surface area, center of mass, the first moment, centroid of a plane region, moments of inertia, kinetic energy and fluid pressure; solve problems in

analytic geometry, and the polar coordinate system (with regard to calculus ideas); find the limit of indeterminate forms (via L' Hopital); evaluate improper integrals; use Taylor's polynomial and approximations; sequences and series. Computer techniques will be used where applicable. *Prerequisite: MAT 2504 or consent of department head. (5-0) 5

*MAT 2506 **Analytic Geometry and Calculus IV:** The last of a four-quarter sequence. Students will perform operations on vectors in two and three dimensions; find derivatives and integrals of vector-valued functions in two and three dimensions; find velocity and acceleration; determine domain, continuity and the differentiability of functions of more than one variable; find partial derivatives, total derivatives, higher-order partial derivatives, directional derivatives, gradients; evaluate and apply partial derivatives and line integrals; evaluate and apply multiple integrals (including double integrals, interated integrals, center of mass, double integrals in polar coordinates, surface area and triple integrals). Computer techniques will be used where applicable. *Prerequisite: MAT 2505 or consent of department head. (5-0) 5

*MAT 2508 **Ordinary Differential Equations:** A first course in the study of differential equations. Upon completion of this course, students will be able to solve ordinary differential equations by the standard methods of solution. This includes the methods of variable separable, first-order, exact, homogeneous, equations reducible to first-order, existence and uniqueness of solutions, homogeneous equations with constant and variable coefficients, Euler, linear homogeneous by Taylor's series, non-homogeneous and undetermined coefficients; variation of parameters; elimination and matrix method to homogeneous linear solutions; variation of parameter to non-homogeneous systems; the Laplace transform applied to differential equations and systems; series solution of second-order linear equations; boundary value problems including eigen values and eigen functions; numerical solutions including Euler Taylor, Runge-Kutta and systems of first-order. In addition, students will demonstrate an understanding of the general theory of ordinary differential equations and the application of differential equations to present-day engineering problems. Computer techniques will be used where applicable. *Corequisite: MAT 2506 or consent of the department head. (5-0) 5

*MAT 2514 **Statistics I:** Students will organize, analyze and interpret statistical data; calculate measures of central tendency and dispersion; state and apply basic probability laws; draw statistical inferences using random sampling and the binomial, normal +, and chi square distributions; test hypotheses, find sample sizes and confidence intervals for a single population. *Prerequisite: MAT 1504 or MAT 3504 or MAT 3507 or consent of the department head. (5-0) 5

*MAT 2515 **Statistics II:** A continuation of Statistics I. Students will draw statistical inferences using student's t, chi-square, and F distributions for two populations; design experiments; use analysis of variance, contingency tables and linear regression; evaluate the correlation coefficient; test the utility of a multiple regression model; use non-parametric methods including the sign test. Students will select and prepare an individual project. *Prerequisite: MAT 2514 or consent of the department head. (5-0) 5

*MAT 2590 **Individual Study:** This course will provide students with the opportunity to develop a special program of studies to meet a particular need not met by other offerings of the Mathematics Department. Each student or group of students works under the supervision of a member of the Mathematics Department. *Prerequisite: Approval of the sponsoring instructor and the department head. (5-0) 5

*MAT 3306 **Technical Trigonometry:** Students will define the trigonometric ratios; solve right triangles; find resultants and components of vectors; add vectors; find trigonometric ratios of standard position angles; solve oblique triangles using the Laws of Sines and Cosines; sketch sine and cosine waves; perform operations on complex numbers in polar and rectangular form. *Prerequisite: MAT 3504 or consent of department head. (3-0) 3

MAT 3500 **Mathematics for Fire Protection:** A technical mathematics course designed to meet the needs of the Fire Protection program. Students will perform basic arithmetic operations on whole numbers, fractions and decimals; find areas and volumes; solve linear equations; solve problems using ratio and proportion; and reduce or convert measurements. (5-0) 5

MAT 3501 **Mathematics for Public Safety:** A technical mathematics course designed to meet the needs of the Public Safety program. Students will perform the basic operations of arithmetic on whole numbers, fractions and decimals; find percentages and averages; use the metric system; solve equations; set up and apply ratio and proportion; use consumer mathematics. (5-0) 5

MAT 3504 **Technical Mathematics I:** Students will solve fractional, non-fractional and quadratic equations; find special products and factor; graph; perform operations on algebraic fractions; rearrange formulas; solve systems of equations; and use matrices and determinants. (5-0) 5

*MAT 3505 **Technical Mathematics II:** Students will perform operations on polynomials; solve and graph linear equations; simplify and perform operations on square root radicals; solve radical equations and formulas; graph non-linear functions; and find powers and roots. *Prerequisite: MAT 3504 or consent of department head. (5-0) 5

*MAT 3507 **Engineering Technology Mathematics I:** Students will convert units of measurement from the English system to the metric system and conversely; perform the basic operations on algebraic expressions; define and recognize a function; graph functions; solve systems of equations graphically, algebraically, and by determinants; define and use trigonometric functions of any angle; find vector sums and differences; apply radians to problem solving; solve oblique triangles by law of sines and cosines. *Prerequisite: Placement examination or MAT 9510, or consent of department head; Corequisite: high school credit in geometry or MAT 9511. (5-0) 5

*MAT 3508 **Engineering Technology Mathematics II:** A continuation of MAT 3507. Students will perform operations on advanced algebraic expressions; factor algebraic expressions; solve quadratic equations, equations in quadratic form, and equations with radicals; add, subtract, multiply and divide complex numbers; apply fundamental laws of exponents and of logarithms; evaluate determinants using minors, and graph trigonometric functions. *Prerequisite: MAT 3507 or consent of department head. (5-0) 5

*MAT 3509 **Engineering Technology Mathematics III:** An applied course in analytic geometry and calculus designed for engineering technology students. Students will solve inequalities, verify trig. identities, solve plane analytic geometry problems related to the circle, parabola, ellipse, hyperbola and straight line; find limits, slope of a tangent line to a curve, and

derivatives; differentiate polynomials, products, quotients, powers and implicit functions; apply the derivative to tangents and normals, curvilinear motion, related rates, curve sketching, Newton's method to solve equations, and maximum minimum problems. *Prerequisite: MAT 3508 or consent of department head. (5-0) 5

*MAT 4507 **Engineering Technology Mathematics IV:** A continuation of MAT 3509. Students will find differentials, antiderivatives, indefinite integrals; integrate numerically; and evaluate integrals using the Trapezoidal Rule. Students will also apply integration to practical problems; find derivatives of transcendental functions; use various methods of integration to evaluate intervals; and expand functions in series using Maclaurin, Taylor and Fourier Series. *Prerequisite: MAT 3509 or consent of department head. (5-0) 5

MAT 5304 Basic Mathematics I: Upon completion of this course, students should be able to: perform arithmetic operations on whole numbers, fractions and decimals; solve problems relating to percents, metric measurements and graphs. (3-0) 3

*MAT 5305 **Basic Mathematics II:** Upon completion of this course, students should be able to: perform simple operations involving the fundamentals of applied algebra such as symbols, first degree equations, ratio and proportions, exponents and radicals; perform simple operations involving the fundamentals of applied geometry for both flat and solid shapes; perform simple operations involving the fundamentals of applied trigonometry such as concepts or right triangle trigonometry, sine, cosine and tangent; perform simple operations involving tolerances, classes of fits and dimensional tolerancing. *Prerequisite: MAT 5304 or consent of department head. (3-0) 3

Mathematics—Advancement Studies

MAT 9300 Math Anxiety Reduction: Upon completion of this course, students should be able to demonstrate an awareness of math anxiety, develop personal strategies for reducing math anxiety as an obstacle to scholastic achievement, demonstrate improved mathematical skills in specific course areas, and exemplify positive behavior and self confidence in the subject matter. (3-0) 3

MAT 9500 Arithmetic: An individualized self-paced course designed for students who need basic arithmetic skills. Upon completion of MAT 9500, students should be able to perform arithmetic operations and solve problems relating to whole numbers, fractions, decimals, percents, measurement and introduction to algebra. (0-10) 5

MAT 9502 Developmental Algebra I: A course designed to meet the needs of any student who has not had high school Algebra I or for whom it is advisable to repeat. The course is offered by two methods: individualized, and self-paced or as a lecture course. Upon completion of MAT 9502, students should be able to solve problems relating to the language and symbolism of algebra, elementary set theory, algebraic properties of the real number, solution of first degree equations, graphs of linear equations, solution of systems of linear equations by graphing and algebraic methods, factoring polynomial expressions, solving fractional equations. Students shall take MAT 9510 before advancing to college or technical math level. (0-10) 5

*MAT 9510 **Developmental Algebra II:** A course designed for students whose algebraic background is limited to the equivalent of high school Algebra I *OR* for those who need to review algebra before entering college or technical mathematics. The course is now offered in two ways, as an individualized and self-paced course or as a lecture course. Upon completion of MAT 9510, students should be able to solve equations and inequalities of first degree; solve systems of two first degree equations algebraically and graphically; graph first degree inequalities in one variable; factor quadratics; simplify radicals; solve rational equations; and solve quadratic equations with real roots. Upon completion, students should be prepared to take MAT 3504 if in Business Data Processing Technology, MAT 3507 if in Engineering Technologies, or MAT 1504 if in the College Transfer program. *Prerequisite: High School Algebra I or MAT 9502 or placement test. (5-0) 5

MAT 9511 Modern Geometry: A lecture-discussion course for the study of plane geometry, this geometric approach stresses applications to everyday life. This course is designed for students who need a review or for students who have not completed high school geometry. Upon completion of MAT 9511, students should be able to solve problems relating to congruency, similarity, special right triangles, areas and volume. Corequisite for MAT 1514 and MAT 3507. May be taken concurrently with MAT 9502, MAT 9510, MAT 1504, MAT 3504, MAT 3507 or MAT 1514. (5-0) 5

Mechanical Engineering Technology

MEC 3101 Mechanical/Manufacturing Seminar: Upon successful completion of this course, students will: have received an orientation to the College, the mechanical/manufacturing programs, including the services and personnel available; have explored available mechanical/manufacturing course specializations and associated career path opportunities; have explored the continuing education possibilities, including the Bachelor of Engineering Technology (BET) programs; have explored the benefits of membership in professional organizations, including the student section of SME; have heard speakers from industry discuss their individual needs and what they look for when selecting graduates for employment. (1-0) 1

MEC 3404 Manufacturing Processes I: Upon completion of this course, students should be able to: describe the different methods of metal casting and their field of application; discuss the production and uses of powder metal products; describe the different methods of hot and cold metal forming and their use; explain the different types of welding methods and their field of application; enumerate some other joining processes, such as brazing, soldering, mechanical fastening, etc., and specify their proper field of use; and predict and identify potential problems related to the above manufacturing processes. (3-3) 4

*MEC3405 **Manufacturing Processes II:** Upon completion of this course, students should be able to: discuss standards of measurements, fits and tolerances; use precision and non-precision measuring devices; explain the difference between accuracy and precision; understand and use the principles of metal cutting theory as related to tool geometry, machinability, surface finish, coolants and lubricants and choice of cutting tool materials; describe the construction and use of the lathe family of machine tools, the various types of drill presses and milling machines; describe the abrasive machining processes and the

characteristics of grinding machines; identify and describe several nontraditional machining methods; and enumerate thread cutting and gear making processes and machinery. *Prerequisite: MEC 3404, MAC 3201. (3-3) 4

*MEC 3524 **Mechanics of Materials:** Upon completion of this course, students should be able to: identify and calculate simple stresses; compute the deformation and strain due to axial and shearing stresses; construct shear and moment diagrams; calculate stresses in beams and deflection of beams; compute stresses due to combined loading; analyze and design welded, bolted and riveted connections; and calculate the load carrying capacities of long and intermediate columns. *Prerequisite: MAT 3508, MEC 4508. (3-6) 5

*MEC 4304 **Compound Angles:** Upon completion of this course, a study of special geometric solids encountered in the planning and production of jigs and fixtures, students should be able to: recognize and solve problems pertaining to the five basic types of solids; convert orthographic drawings to pictorials; recognize and solve problems related to compound angular drilling and boring. *Prerequisite: MAT 5305, MEC 3405 or departmental permission. (2-3) 3

*MEC 4327 **Microcomputer Applications Project:** Upon completion of this course, students should have developed the necessary software to enable use of the microcomputer as a problem solving tool for a significant Mechanical/Manufacturing Engineering Technology application. The application must have significant technical depth and potential practical application for the practicing engineering technician. Projects will be selected by the student from relevant areas after consultation with the instructor. *Prerequisite: Seventh quarter standing. (1-6) 3

*MEC 4402 **Machine Design:** Upon completion of this course, students should be able to: design machine parts on the basis of function and strength of material calculations, such as: fasteners, permanent joints, shafts and couplings, plain bearings, ball and roller bearings, belts and chains, gears, clutches, brakes, and springs; select machine parts for a particular machine function by use of manufacturers' catalogs, manuals, and periodicals; and complete a design project. *Prerequisite: DFT 3406, MEC 3524, MEC 4434. (2-6) 4

MEC 4403 **Engineering Materials:** Upon completion of this course, students should be able to: enumerate basic manufacturing processes and define physical and mechanical properties of materials; perform and evaluate standard tests such as tensile, impact, hardness, etc.; discuss the structure of metals, characteristics of metals, the effect of heat treating on ferrous metals; describe the production and properties of ferrous and nonferrous metals; explain the various heat treatment processes, the equipment used and perform simple heat treatment processes; describe the properties of thermosetting and thermoplastic polymers and ceramic and composite materials; and discuss material selection on the basis of specific properties. (3-3) 4

*MEC 4404 **Tool and Die Design:** Upon completion of this course, a study of the knowledge and skills needed for the design of tools, fixtures and dies, students should be able to: design single point and multiple point cutting tools; design and draw jigs and fixtures; design piercing and blanking dies; design bending and forming dies; and complete a design project. *Prerequisite: DFT 3405, MEC 3524. (2-6) 4

*MEC 4405 **Mechanisms:** Upon completion of this course, students should be able to: solve by graphical methods, and check by analytical methods, problems concerning the motion of machine elements, including the displacement, velocity and acceleration of points and lines within these elements; design the motion scheme part of Machine Design by graphical methods of cams, belts, pulleys, gears and linkages. *Prerequisite: DFT 3405, MEC 4508. (2-6) 4

*MEC 4425 **Thermodynamics:** Upon completion of this course, students should be able to: explain the basic laws of thermodynamics; define the technical terms used in thermodynamics; write in both word and algebraic form the general energy equations; use these equations for solving typical problems; work typical problems using both the English and S.I. unit systems. *Prerequisite: PHY 1405, MAT 3508. (3-3) 4

*MEC 4434 **Hydraulics and Pneumatics:** Upon completion of this course, students should be able to: perform certain computations related to hydrostatics, hydrodynamics and the general gas law; draw hydraulic symbols; make sketches of and explain how the following hydraulic and pneumatic system components work: fluid power pumps and motors, hydraulic cylinders and rams, fluid reservoirs, plumbing and related components, pressure, flow and directional control valves; design and troubleshoot simple hydraulic circuits. *Prerequisite: PHY 1405 or program director approval. (2-6) 4

*MEC 4508 **Applied Mechanics:** Upon completion of this course, students should be able to: solve problems pertaining to force systems; calculate the location of centroids and centers of gravity; draw free-body diagrams; analyze forces in simple trusses and frames; calculate friction; compute the moment of inertia of areas and bodies; construct shear and moment diagrams; solve problems related to the kinetics of particles and rigid bodies; apply the laws of force and motion; and perform calculations related to work, energy and power. *Prerequisite: PHY 1405, MAT 3508. (3-6) 5

MEC 4_94 **Independent Study:** This course is designed to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment will provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor and program director is required prior to enrollment. (1-5 credits)

MEC 5214 **Practical Metallurgy I:** Upon completion of this course, students should be able to: describe the production of iron and steel; discuss the major forming methods; explain the crystalline nature of metals; discuss basic testing procedures; describe the method and use of heat treating; perform hardness and tensile tests; and produce a metallographic sample. [*Note: Does not satisfy degree requirements for Manufacturing or Mechanical Engineering Technology.*] (1-3) 2

*MEC 5215 **Practical Metallurgy II:** Upon completion of this course, students should be able to: describe the methods of classifying steel; discuss the properties and use of cast irons; explain the importance of metallurgy on welding; describe the production and use of powder metal and nonferrous metals; perform simple heat treatments on plain carbon steel; and identify unmarked materials. *Prerequisite: MEC 5214. [*Note: Does not satisfy degree requirements for Manufacturing or Mechanical Engineering Technology.*] (1-3) 2

Also see Manufacturing Engineering Technology and Mechanical Drafting for other course descriptions.

Medical Office Assisting

*MED 3214 **Medical Office Administration I:** Upon completion of this course, students should be able to: describe and demonstrate attitudinal and communication skills; supervisory skills, and housekeeping responsibilities; describe and demonstrate operation and use of office machines; maintain patient records accurately and purchase supplies. *Prerequisite: SEC 3404. (2-0-0) 2

*MED 3300 **Drug Therapy:** Upon completion of this course, students should be able to: identify major drugs and/or drug groups; recognize side effects; describe interaction of drugs; relate various methods of administration of drugs to reactions. *Prerequisite: Fifth quarter standing or departmental approval. (3-0-0) 3

MED 3302 **Medical Lab Fundamentals:** Upon completion of this course, students should be able to: identify and explain medical aseptic practices; relate diagnostic and therapeutic procedures to basic body functions and correlate these procedures for assisting with a physical exam to normal body tissues; use the correct medical terminology in order to communicate with the health care team. (2-2-0) 3

*MED 3303 **Clinical Lab I:** Upon completion of this course, students should be able to: maintain a physician's office in regard to housekeeping and maintenance; carry out medical and surgical asepsis and list procedures and situations in which each is applied; demonstrate correct procedure for assisting the physician with physical examinations; describe the legal standards for drug administration and calculate dosages; and demonstrate a working knowledge of basic nutrition. *Prerequisites: MED 3302, MED 3304. (2-2-0) 3

MED 3304 **Medical Terminology and Vocabulary I:** Upon completion of this course, students should be able to: read and understand medical terms; build medical terms from Greek and Latin prefixes, suffixes, word roots and combining forms; spell medical terms correctly; use a medical dictionary; use appropriate abbreviations and symbols. (3-0-0) 3

*MED 3305 **Medical Terminology and Vocabulary II:** Upon completion of this course, students should be able to: pronounce and spell correctly certain medical terms; define medical terms as they pertain to anatomy, physiology and diseases, operations, tumors, drugs and related descriptive terms; demonstrate ability to build medical words and analyze word components. The above objectives will apply to the following systems: skin and breast, musculoskeletal, cardiovascular, blood and blood forming organs, respiratory, systemic diseases and oncology. *Prerequisite: MED 3304. (3-0-0) 3

*MED 3306 **Medical Terminology and Vocabulary III:** A continuation of MED 3305 with objectives applying to the following systems: neurological and psychiatric, urogenital, gynecological and obstetrics, endocrine, sense, digestive. *Prerequisite: MED 3304. (3-0-0) 3

*MED 3307 **Symptomology:** Upon completion of this course, students should be able to assess signs and symptoms of disease and take appropriate action when dealing with patients in a medical facility. Problem solving techniques will be utilized. *Prerequisite: Fifth quarter standing or departmental approval. (3-0-0) 3

*MED 3315 **Medical Office Administration II:** Upon completion of this course, students should be able to perform such duties as: handling mail and telegrams; making travel arrangements; maintaining office records; handling insurance information; maintaining an appointment system; design and process written communications. *Prerequisite: MED 3214, MED 3404. (3-0-0) 3

*MED 3404 **Medical Economics:** Upon completion of this course, students should be able to: keep a single entry set of books; maintain peg board; maintain a checking account; follow an efficient billing schedule; compose effective collection letters; apply rules for telephone request for payment; handle special collection problems; explain medical fees and assist patients in planning financing of medical care. *Prerequisite: Pre-entrance testing. (3-2-0) 4

MED 4302 **Medical Ethics and Law:** Upon completion of this course, students should be able to: describe the laws that govern the practice of medicine; differentiate between the various medical practice arrangements and their legal implications; describe each medical service available to the public in the community and the way each contributes to comprehensive care; explain the meaning of the A.M.A. Principles of Medical Ethics and discuss how each applies to the physician and the staff; list the Supreme Court decisions in which the Medical profession is directly involved. (3-0-0) 3

*MED 5104 **Medical Assisting Seminar:** Upon completion of this course, students will have begun to explore the personal and vocational responsibilities of a practitioner in the field of medical assisting. A discussion of the problems encountered during the practicum and solutions which may be applied will be shared. *Prerequisite: Fourth quarter standing; Corequisite: MED 5707. (1-0-0) 1

*MED 5204 **Orientation to Health Careers:** Upon completion of this course, students should be able to: identify the important historical contributions to modern medicine; explore major allied health professions and the personal/professional requirements of each; develop skills in psychological assessment of both self and patients. *Prerequisite: Pre-entrance testing or departmental consent. (2-0-0) 2

*MED 5390 **Individual Study:** This course provides students with the opportunity to develop a special program of study to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. *Prerequisite: Approval of the sponsor and department head. (3-0-0) 3

*MED 5400 **Clinical Education A:** This course will involve the identification of a project in a pre-arranged medical agency; the collection and analysis of data and the presentation of findings. Students must obtain prior approval by the instructor. *Prerequisite: Seventh quarter standing. (2-0-6) 4

3*MED 5415 Advanced Medical Office Procedures: Upon completion of this course, students should be able to: assist the physician and explain the preparation to the patient who is to have such advanced diagnostic procedures as chemotherapy, radiation and nuclear medicine; demonstrate correct methods of administering medication, restraining methods, growth patterns and collection of specimens for the pediatric patient; administer CPR. *Prerequisite: Fourth quarter standing. (4-0-0) 4

*MED 5503 **Clinical Lab II:** Upon completion of this course, students should be able to: identify all equipment and supplies and establish a method of inventory; select, assemble and prepare sterile supplies and equipment needed to assist in surgical procedures using aseptic technique; take blood pressure using palpation and auscultation method; demonstrate eye and

ear irrigations and instillations; prepare and administer medications safely and accurately; demonstrate recording and mounting of electrocardiogram; demonstrate professionalism by dependability, responsibility, and initiative. *Prerequisite: Completion of first two quarters; Corequisite: MED 5614. (2-6-0) 5

*MED 5614 **Laboratory Procedures:** Upon completion of this course, students should be able to: cite the laboratory rules of safety; handle the equipment and reagents in a safe, responsible manner; identify the equipment, glassware and supplies by sight and use; demonstrate the basic knowledge of the simple laboratory tests done in a physician's office by performing the test with accuracy, speed, personal integrity and complete honesty. *Prerequisite: Completion of first two quarters. Corequisite: MED 5503. (3-6-0) 6

*MED 5707 **Medical Office Practice:** This course is a practicum in Medical Assisting. Each student is assigned to a physician's office, clinic or out-patient department. Upon completion of this course, students should be able to: perform the duties of the medical assistant as they apply to the assigned office; demonstrate professional and communication skills necessary for the effective care of the patient; express an understanding of the practice of comprehensive health care in the community. *Corequisite: MED 5104, Fourth quarter standing. (0-0-21) 7

Medical Record Technology

*MRT 3201 **Orientation to Medical Record Technology:** Upon completion of this course, students should be able to: describe the duties and educational requirements of the major allied health professional; explain the functions of the major departments of a hospital; match the allied health professional to the hospital department; trace the historical development of medicine, health care facilities, and medical records; describe the structure of the AMRA, its history and categories of membership; define "professionalism"; discuss the characteristics and qualities of a professional; discuss the new trends in health care delivery system; identify at least ten health agencies and cite the purpose of each; describe the basic functions of a medical record department; discuss the various job opportunities of the ART; correlate the courses in the MRT program with the appropriate job responsibilities in the medical record department. *Prerequisite: Pre-entrance testing. (2-0-0) 2

*MRT 3204 **Directed Practice I:** This is the first in a series of four courses which provide supervised clinical learning experiences in local health care facilities. Students should be able to demonstrate competently the ability to: communicate effectively with others; accept the personal responsibilities of promptness, personal neatness and learning of departmental medical record procedures and practices; apply the theory of medical record practices acquired in MRT 3300 and MRT 4312 by performing skills as provided in the general hospital. *Prerequisite: MRT 3300, MRT 4312, MRT 4315, or departmental consent. (0-0-6) 2

MRT 3205 **Health Record Procedures I:** Upon completion of this course, students should be able to: describe the four major types of health care facilities; identify major allied health professionals; describe the three basic types of numbering methods utilized; state the purpose of the Master Patient Index; describe two methods for arranging patient index cards; describe three formats of the medical record; list six purposes of the medical record; identify forms included in a medical record and the individual responsible for completing each form; assemble five records in the prescribed order accurately. (1-2-0) 2

*MRT 3206 **Health Record Procedures II:** Upon completion of this course, students should be able to: recognize when a record is technically incomplete; perform the analysis of five records accurately; describe the three basic methods of filing; apply the basic principles for filing; describe the two basic types of filing equipment; list four steps to be followed to insure accurate filing; list three examples of filing supplies used to assist the file clerk; describe the steps in preparing a record for microfilming. *Prerequisite: MRT 3205. (1-2-0) 2

*MRT 3300 **Medical Record Content and Maintenance:** Upon completion of this course, students should be able to: describe various numbering and filing systems (advantages/disadvantages); retrieve and file medical records by each of the three major filing systems; describe the value, uses and contents of medical records; identify and describe the contents of various medical record forms; perform assembly and quantitative analysis of the medical record; describe the three basic formats of medical records; describe the different methods of record storage. *Prerequisite: MRT 3201, SEC 3404. (2-2-0) 3

*MRT 3301 **Quality Assurance in Health Care Facilities:** Upon completion of this course, students should be able to: state the purpose and philosophy of quality assurance; discuss the impact of current health legislation on quality assurance; discuss the history and current status of quality assurance; describe the organization of the Peer Review Organization system; state the JCAH and federal requirements for quality assurance; describe quality assurance/assessment procedures; perform data collection and display utilizing various types of formats; discuss and perform the basic medical record procedures related to patient review procedures. *Prerequisite: MRT 3300; Prerequisite or corequisite: MRT 3302, MRT 4315, MRT 4312, or departmental consent. (2-2-0) 3

*MRT 3302 **Basic ICD-9-CM Coding:** Upon completion of this course, students should be able to: discuss the evolution of ICD-9-CM; define the symbols, abbreviations and conventions used with ICD-9-CM; apply the coding principles of ICD-9-CM with 80% accuracy; code and retrieve diagnoses and procedures proficiently. *Prerequisite: BIO 1504, BIO 1505, MED 3305, MED 3306, or departmental consent. (1-4-0) 3

*MRT 3303 **Advanced Coding Concepts:** Upon completion of this course, students should be able to: apply ICD-9-CM principles in coding medical records; develop procedures for quality control of coding; discuss the methods for indexing diagnoses and operations; index diagnoses and operations manually; discuss the prospective payment system and its relationship to coding practices; define the terms related to the prospective payment system; determine the diagnostic related group number for a given sample of medical records; discuss the purposes of nomenclatures and classification systems; describe the basic principles for utilizing various nomenclatures and classification systems; apply the coding principles of a variety of nomenclatures and classification systems; identify the health care facilities utilizing each of the systems. *Prerequisite: MRT 3300, MRT 3302, MRT 3424, EDP 3310. (1-4-0) 3

*MRT 3414 **Medical Record Statistics:** Upon completion of this course, students should be able to: compute the various hospital statistics and prepare reports; define all terms related to hospital statistics; discuss the procedures for completing vital statistics on births, deaths and reportable diseases; discuss the sources and use of health data; cite the major functions of a Cancer Registry; collect and process data as required in a Cancer Registry. *Prerequisite: MRT 3300, MRT 3302. (2-4-0) 4

*MRT 3424 **Principles of Disease:** Upon completion of this

course, students should be able to: classify disease processes according to their etiology and organ system involvement; discuss the physical signs and symptoms, complications and preferred treatment of specific disease processes. *Prerequisite: BIO 1504, BIO 1505, MED 3305, MED 3306, or departmental consent. (4-0-0) 4

*MRT 4205 **Directed Practice II:** This is the second in a series of four courses which provide supervised clinical learning experience in a local health care facility. Students should be able to communicate effectively with others; accept the personal responsibilities of promptness, personal neatness and learning of departmental record procedures and practices; apply the theory of medical record practices acquired in MRT 3300, MRT 4315, MRT 4312. *Prerequisite: MRT 3204; Prerequisite or corequisite: MRT 3302, MRT 3301, or departmental consent. (0-0-6) 2

*MRT 4206 **Directed Practice III:** This is the third in a series of four courses which provide supervised clinical learning experience in a local health care facility. Students should be able to communicate effectively with others; accept the personal responsibilities of promptness, personal neatness and learning of departmental record procedures and practices; apply the theory of medical record practices acquired in MRT 3300, MRT 4315, MRT 4312, MRT 3301, MRT 3302. *Prerequisite: MRT 4205. Prerequisite or corequisites: MRT 3414, MRT 3303, MET 3400, or departmental consent. (0-0-6) 2

*MRT 4312 **Legal Aspects of Medical Records:** Upon completion of this course, students should be able to: discuss the jurisdiction of the Federal and State courts; describe the laws written by non-governmental bodies which affect the medical records; describe the property rights and ownership of the medical record; discuss the medical record as a legal document; discuss contents, authorization and releases of medical information; describe statutes and hospital policies which govern the uses of medical records and the information contained in them; discuss the current health legislation which affects the medical record practitioner. *Prerequisite or corequisite: MRT 3300, or departmental consent. (2-2-0) 3

*MRT 4315 **Medical Record Standards and Regulations:** Upon completion of this course, students should be able to: identify the major accrediting and licensing agencies and the purpose of each; discuss the role of the JCAH; cite the medical record standards set forth under Medicare/Medicaid and JCAH; describe the various types of long-term care facilities and medical record standards; recognize the basic standards for the various hospital departments with emphasis on the medical record regulations. *Prerequisite: MRT 3300, MRT 4312. (3-0-0) 3

MRT 4390 **Individual Study:** Upon completion of this course, students should be able to meet the objectives outlined by the student and instructor to meet particular student needs not provided in other courses of study. Prerequisite: program director approval. (3-0-0) 3

*MRT 4405 **Medical Record Seminar:** Upon completion of this course, students should be able to: discuss the various personal and vocational responsibilities of the medical record practitioner; analyze problems which are encountered as a medical record practitioner and discuss solutions; discuss various sources of information and assistance which are available to the practicing medical record professional. *Prerequisite: Sixth quarter standing or departmental consent. (4-0-0) 4

MRT 4406 **Directed Practice IV:** Upon completion of this course, students should be able to: demonstrate competent performance of medical record functions in hospital medical record departments to include, compilation of statistical reports, coding for prospective payment system, quality assurance, and utilization review procedures; discuss work flow; prepare job description and procedures; compare procedures as performed in hospitals of various sizes, describe the various professional roles of the medical record technician within a hospital; demonstrate professional conduct in preserving confidentiality of health information. *Prerequiste: MRT 4206, sixth quarter standing, or departmental consent. (0-0-12) 4

MRT 4407 **Directed Practice V:** Upon completion of this course, students should be able to: demonstrate competent performance of medical record functions and work flow in various types of health care facilities to include mental health centers/hospitals, group practices clinics, long term care facilities and others as available; describe professional clinics, long term care facilities and others as available; describe professional conduct in preserving confidentiality; prepare job descriptions and procedures; describe the various professional roles of medical record technicians. *Prerequisite: MRT 4206, sixth quarter standing, or departmental consent. (0-0-12) 4

Medical Transcription

*MET 3204 **Medical Transcription Seminar:** At the completion of this course, students should be able to: identify problems that may arise when working as a Medical Transcriptionist; suggest ways to solve these problems in a manner in keeping with the professional worker; express increased knowledge of basic procedures and understanding of the medical practice gained by reviewing and sharing experiences and oral reports. *Corequisite: MET 3505. (2-0-0) 2

*MET 3400 **Introduction to Medical Transcribing:** In this course, students will be introduced to material that is routinely transcribed in a medical office. Upon completion of this course, they should be able to transcribe given medical material accurately. *Prerequisite: MED 3304, SEC 3404. (2-4-0) 4

*MET 3406 **Clinical Practice II:** This is the practice of medical transcription in a physician's office or hospital record room. At the completion of the course, students should be able to: operate transcription equipment efficiently; demonstrate competency in transcribing medical reports; establish positive rapport with co-workers; utilize and organize time to best advantage. *Prerequisite: MET 3904. (0-0-12) 4

*MET 3505 **Clinical Practice I:** This is the practice of medical transcription in a physician's office or hospital record room. At the completion of the course, students should be able to operation transcription equipment efficiently; demonstrate competency in transcribing medical reports; establish positive rapport with co-workers; utilize and organize time to best advantage. *Prerequisite: MET 3904. (1-0-12) 5

*MET 3904 **Transcription:** At the completion of this course, students should be able to: demonstrate operation of dictating machines correctly and efficiently; given practical situations, identify ethical and legal aspects of medical transcription; given worksheets, demonstrate competency in the use of dictionaries, PDR and other references; transcribe medical reports and correspondence from a cassette, record or belt into a final typed mailable and permanent form in an assigned length of time; given discussion and medical terms, relate the disease process with diagnostic and therapeutic procedures and with the anatomical parts involved; given transcribed medical reports, read and explain the content of the report. *Prerequisite: MET 3400. (4-10-9) 9

Music

MUS 1100 Vocal Ensemble: This performing laboratory will prepare students for public performance at the end of the session. Emphasis is upon sight-singing, demonstration and use of proper vocal techniques, tonal production and ensemble performance. Each student will be given the opportunity to perform representative compositions from the major periods in music. (0-3) 1

MUS 1104 Class Voice: Upon completion of this course, students should be able to: demonstrate correct posture, breathing and support for the resonation of vowels, proper diction; perform selected pieces from song literature. (0-2) 1

MUS 1105 Class Voice II: Upon completion of this course, students should be able to perform from memory in recital an art song, aria, and other song demonstrating an understanding of acceptable performance standards, musical styles, translations, and the use of the International Phonetic Alphabet. (0-2) 1

MUS 1107 Chamber Choir: This is a practical performing class designed to acquaint students with various styles of choral music culminating in a public performance at the end of the session. The program may vary each quarter depending upon vocal abilities and size and balance of choir. Emphasis is placed upon correct tonal production, proper vocal techniques, sight-reading, ensemble performance, and repertoire. (0-3) 1

MUS 1112 Class Strings: Students will study the principles and techniques of playing the violin, viola, cello and double bass. (0-3) 1

MUS 1117 Wind Ensemble: An organization designed to provide the opportunity for wind instrument students to continue the study of their particular instruments and to become familiar, through ensemble performance, with music of various composers, periods and styles. (Credit cumulative not to exceed six quarter hours.) (0-3) 1

MUS 1122 Fiddle—Blue Grass and Old-Time: Upon completion of this course, students should be able to: tune and maintain their instruments; demonstrate a working knowledge of chords; play a minimum of ten songs; accompany other musicians; demonstrate the ability to read music. (0-3) 1

MUS 1127 Orchestra: An organization designed to provide continuing performance opportunity for students who have already developed some skills on an orchestral instrument. Emphasis will be placed on further development of each student's playing ability and an acquaintaince with orchestral literature. (0-3) 1

MUS 1128 Concert Band: An organization designed to provide performance opportunity for students who have already developed skills on a band instrument. Emphasis is placed on further development of skills on particular instruments as well as acquaintance with band literature. (0-3) 1

MUS 1132 Introduction to Sight Singing and Ear Training: A class designed to acquaint students with the principles of solfege and pitch organization, rhythmic patterns and basic harmonic progression. Upon completion of this course, they should be able to recognize and transcribe intervals, diatonic melodies, simple rhythms and basic chord progressions. (0-2) 1

MUS 1133 Banjo—Old-Time Music: Upon completion of this course, students should be able to: tune the banjo in G, C and C minor; use a capo for additional tunings; demonstrate the basic chord position in the three main tunings; play with a rhythmic clawhammer style including the drop thumb technique; coordinate left and right hands without difficulty; play selected tunes in the text from memory; demonstrate the ability to read tablature from the text. (0-3) 1

MUS 1136 Clawhammer Banjo II: Upon completion of this course, students should be able to: play in at least five tunings comfortably with the use of a capo; play the most common fingering patterns in each tuning; play traditional tunes up to tempo; play selected tunes from memory; demonstrate the ability to write simple tablature. (0-3) 1

MUS 1139 Old-Time Music "Jam": Upon completion of this course, students should be able to: participate actively as a performer in an old time music "jam"; demonstrate skills in performing, both vocally and on instruments of their choice; demonstrate poise and skill in leading the class in specific music; demonstrate an acquaintance with several kinds of "traditional" music. (0-3) 1

MUS 1154 Class Piano I: In an electronic piano laboratory setting, students will receive group instruction in the basic principles and techniques of piano playing for the beginning student. Upon completion of this course, students should demonstrate ability: in playing and spelling pentachords chromatically in all major keys; in playing the chord progression I-IV6/4-V6/5 and simple two-hand compositions in keys of C and G; in sightreading and improvisation; in identifying intervals through the sixth. (0-3) 1

MUS 1155 Class Piano II: A continuation of MUS 1154. Students will be introduced to and demonstrate mastery of major tetrachord scales and key signatures, chord progression I-IV6/4-V6/5 in all white keys, traditional scale fingerings in C, more advanced repertoire, sightreading, and improvisation primarily in keys of C, F and G. (0-3) 1

MUS 1156 Class Piano III: A continuation of MUS 1155 consisting of an integrated study of literature and theory. Upon completion of this course, students should be able to play—in addition to a number of pieces—the chord progression I-IV6/4-V6/5 in all major keys, minor pentachords chromatically, the chromatic scale. They should know the principles of traditional scale fingerings in major keys, and show some mastery of the damper pedal. (0-3) 1

MUS 1157 Intermediate Piano I: Upon completion of this course, students should have developed skills in reading, technique, theory and musicianship needed to play a number of pieces selected from standard piano literature. (0-3) 1

MUS 1158 Intermediate Piano II: Upon successful completion of this course, students should have developed skills in reading, technique, theory and musicianship needed to play more complex pieces selected from standard piano literature. (0-3) 1

MUS 1160 Classical and Flamenco Guitar: Upon completion of this course, students should be able to read guitar music, play major and minor chords, some seventh chords and perform selected solos by Bach, Beethoven, Torego, Aguado and Lori. They should also be able to perform right and left hand classical technique Carcassi studies and right hand studies in the tremolo technique and flamenco strums and rasguados. (0-3) 1

MUS 1164 Guitar: Upon completion of this course, students should be able to: read guitar music in the first position; perform a selected number of guitar solos, single note passages and duets.

They should also be able to play chords in the first position and be able to transpose to other selected keys. (0-3) 1

MUS 1165 Guitar II (Intermediate): Upon completion of this course, students should be able to: read blocked and arpeggiated chords, demonstrate ability to play both a melody and accompanying arpeggio pattern; perform a selected number of etudes; arrange for solo guitar a song (or songs) to include melody with accompaniment; demonstrate increased ability to read single line. (0-3) 1

MUS 1166 Folk Music Guitar I: Upon completion of this course, students should be able to: play a select number of basic chords; use different strumming techniques; play simple accompaniments of folk songs for singers; read simple folk music for guitar; demonstrate a general knowledge about the instrument and its historical development. (0-3) 1

MUS 1167 Folk Music Guitar II: Upon completion of this course, students should be comfortable with their instruments and be able to join in informal "jam" sessions with other folk musicians using basic chords and notes. They should be able to play at an intermediate level and will have accumulated a sizeable collection of traditional folk music. (0-3) 1

MUS 1171 Chords I: Upon completion of this course, students should be able to: translate standard chord symbols into notes and play them on the keyboard; supply the proper symbol for any given chord; reharmonize simple tunes and reduce them to lead sheets. (0-2) 1

MUS 1172 Chords II: Upon completion of this course, students should be able to: interpret and play most standard lead sheets; reharmonize given melodies both in writing and on the keyboard; transpose to any given key. (0-2) 1

MUS 1188 Hammered Dulcimer: Upon completion of this course, students should be able to tune the instrument and demonstrate use of the basic hammering techniques using simple tunes. (0-3) 1

MUS 1189 Autoharp: Upon completion of this course, students should be able to: tune and properly maintain the autoharp; demonstrate the ability to hold the autoharp properly and to change chords with facility; demonstrate an understanding of rhythm, meter, pitch; demonstrate skills in playing, strumming and picking patterns; demonstrate ability to play with music and "by ear"; demonstrate skills necessary for basic melody picking. (0-3) 1

MUS 1304 Children's Music I: Upon completion of this course, students should be able to: plan a music program for young children (ages infant to 10 years); display working knowledge of fundamentals of music; play autoharp, rhythm band and Orff instruments; develop a resource file of methods and materials. (3-0) 3

***MUS 1305 Children's Music II:** A continuation of MUS 1304. In addition, students should become familiar with children's song literature, recordings and basic trends in music education. Each student will be responsible for making observations of various music programs in the community. *Prerequisite: MUS 1304. (3-0) 3

MUS 1310 Introduction to Music Theory: A beginning or refresher course for students with little or no keyboard background, this course should prepare students for Music Theory I. Included are the fundamentals of music theory, notation, major and minor scales, intervals and basic chord structure. Upon completion of this course, students should demonstrate a better understanding of the basic principles and application of music theory. (3-0) 3

MUS 1314 Music Appreciation I: Upon completion of this course, students should have developed skills in basic listening and understanding of the art of music. Class material will introduce students to basic musical terminology, form and history. This perspective should enable each student to be an informed listener. (3-0) 3

MUS 1315 Music Appreciation II: Upon completion of this course, students should have developed skills in basic listening and understanding of music from the baroque and classical periods. (3-0) 3

MUS 1316 Music Appreciation III: Upon completion of this course, students should have developed skills in basic listening and understanding of music from the romantic and contemporary periods. (3-0) 3

MUS 1320 Music for Dancers I: Upon completion of this course, students should have developed skills in basic listening and understanding of music from the baroque and classical periods. (3-0) 3

MUS 1321 Music for Dancers II: Upon completion of this course, students should have developed skills in basic listening and understanding of music from the romantic and contemporary periods. (3-0) 3

MUS 1324 Recording Studio Techniques I: Students will be introduced to the recording studio from an artistic and operational point of view, the operation and function of audio consoles, microphones, multi-track recorders, echo chambers and their relationship to the musician, sound engineer and producer. (3-0) 3

***MUS 1325 Recording Studio Techniques II:** This course is a continuation of MUS 1324 with observation of multi-track recording and mix-down, mike placement and patch bay functions. Students participate as producers, musicians, singers and back-up voices while the instructor directs their use of studio equipment. *Prerequisite: MUS 1324. (0-6) 3

***MUS 1326 Recording Studio Techniques III:** This is the last of a series of three courses in Recording Studio Techniques. The course is predominantly a recording studio workshop whereby the student is given the opportunity to create and produce music, operate the console and tape recorders, and exhibit creativity in phases that hold the most interest. *Prerequisite: MUS 1325. (0-6) 3

***MUS 1334 Music Manuscript I: Autography and Preparation:** This course is designed to teach serious students fundamental skills in music calligraphy including notational techniques, technical vocabulary, and editing procedures by which music is prepared for performance and graphic reproduction by autography. *Prerequisite: Basic music literacy—approved by division head. (2-2) 3

***MUS 1335 Music Manuscript II:** This course should enlarge and develop the skills which students have acquired in MUS 1334 with the addition of further techniques and specific problems encountered by the copyist. *Prerequisite: MUS 1334. (2-2) 3

***MUS 1404 Music Theory I:** This is an integrated course in which attention is given to harmony, sight singing, dictation, and keyboard. The harmony deals with forming and recognizing all types of triads and the five most commonly used seventh chords with their inversions in both major and minor tonality. Simple part-writing in three, four, and five voices is introduced. *Prerequisite: MUS 1310 or departmental consent. (3-2) 4

***MUS 1405 Music Theory II:** This course is a continuation of MUS 1404. Emphasis is placed on part-writing in three, four

five voices using root position, first and second inversion triads, on analysis which includes recognition of non-chord tones, and on more advanced work in sight-singing, dictation and keyboard. *Prerequisite: MUS 1404. (3-2) 4

*MUS 1406 **Music Theory III:** This course is a continuation of MUS 1405. Harmony study includes further consideration of non-chord tones and part-writing using all diatonic seventh chords. More advanced work is done on sight singing, dictation, and keyboard. *Prerequisite: MUS 1405. (3-2) 4

MUS 2000 **Seminar in Music:** A lecture-laboratory course devoted to special areas of music which can be effected over one or several meetings. Contact hours and credit hours to be variable. Contact: TBA; credit 1

MUS 2100 **Seminar in Music:** A lecture-laboratory course devoted to special areas of music which can be effected over one or several meetings. Contact hours and credit hours to be variable. Contact: TBA; credit 1

MUS 2154 **Advanced Class Piano I:** Upon completion of this course, students should be able to harmonize simple tunes using secondary dominants and play a minimum number of technical studies and selected pieces of piano literature. (0-3) 1

MUS 2155 **Advanced Class Piano II:** A continuation of MUS 2154. This course emphasizes technical development and mastery of music from several historical periods. Students should be able to play three or more etudes and pieces studied by the entire class, and perform one or more pieces selected to improve or capitalize on individual pianistic ability. (0-3) 1

MUS 2156 **Advanced Class Piano III:** A continuation of MUS 2155. Technical and stylistic problems are dealt with both individually and collectively. Upon completion of this course, students should be able to perform one movement of a classical sonata, a baroque dance, and a romantic or contemporary work, or the equivalent. (0-3) 1

MUS 2158 **Piano Ensemble:** Designed for students having completed six or more quarters of piano, this class is an introductory study of piano literature requiring two or more persons performing on one or more pianos. Emphasis is upon ensemble performance, repertoire, sight reading and continued technique building. (0-3) 1

*MUS 2169 **Jazz Guitar:** Upon completion of this course, students should be able to: harmonize a standard tune, play C major scale in 12 positions and demonstrate basic understanding of chord/scale relationships through use of chord shapes. *Prerequisite: Knowledge of 1st position C,A,G,E,D chords, barre chords, and major scale. (0-3) 1

MUS 2200 **Seminar in Music:** A lecture-laboratory course devoted to special areas of music which can be effected over one or several meetings. Contact hours and credit hours to be variable. Contact: TBA; credit 2

MUS 2201 **Business of Music:** Upon completion of this course, students should be able to demonstrate, both orally and in writing, a basic understanding of Copyright Law, arrangements and abridgements of music, recording and songwriting contracts, agents and managers, performing rights organizations and the musician's union. (2-0) 2

MUS 2202 **Songwriting:** Upon completion of this course, students should be able to write melodies and themes to given texts and original texts. (2-0) 2

*MUS 2204 **Special Problems in Music:** An advanced problems course in which the student will select a topic for independent study involving laboratory and library work. *Prerequisite: approval of division head. (1-3) 2

MUS 2257 **Jazz Piano I:** Upon completion of this course, students should be able to construct jazz chords from written chord symbols on the keyboard, write these chords on manuscript paper and be able to take a standard popular tune and reharmonize it according to certain basic rules. (1-3) 2

*MUS 2258 **Jazz Piano II:** Upon completion of this course, students should be able to reharmonize standard public domain tunes, create introductions, endings, modulations reflecting the state of the art. *Prerequisite: MUS 2257. (1-3) 2

MUS 2300 **Seminar in Music:** A lecture-laboratory course devoted to special areas of music which can be effected over one or several meetings. Contact hours and credit hours to be variable. Contact: TBA; credit 3

*MUS 2338 **Opera Workshop:** This course is designed to help students gain knowledge in interpretation and style of operatic literature and gain experience through performance and opera productions. *Prerequisite: Consent of the instructor. (0-6) 3

*MUS 2404 **History and Literature of Music I:** A study of music from ancient times through the Renaissance. Upon completion this course, students should be able to trace the development of music—its styles and forms—from ancient times through the middle ages and the Renaissance to 1600. Students should know the major composers and should be able to identify some specific works of music and/or forms. *Prerequisite: The ability to read music. (3-2) 4

*MUS 2405 **History and Literature of Music II:** A study of music of the baroque and classical periods up through the early and middle works of Beethoven. Upon completion of this course, students should be able to describe the more important characteristics and forms, vocal and instrumental, of each period as represented especially in the works of Monteverdi, Corelli, Vivaldi, Bach, Handel, Haydn, Mozart and Beethoven, and should be able to identify some specific works. *Prerequisite: The ability to read music. (3-2) 4

*MUS 2406 **History and Literature of Music III:** A study of music of the romantic period beginning with late Beethoven and proceeding through the twentieth century. Upon completion of this course, students should be able to trace the major musical developments through the nineteenth and twentieth centuries with respect to melody, rhythm, harmony, form, instrumentation. Students should be acquainted with a variety of music by the major romantic and contemporary composers and be able to describe and distinguish style characteristics of a number of composers. *Prerequisite: The ability to read music. (3-2) 4

*MUS 2407 **Advanced Music Theory I:** A continuation of MUS 1406. Chromatic harmony is dealt with by way of secondary dominants and modulation. Phrases and periods are studied and work is continued in sight singing, dictation and keyboard. Upon completion of this course, students should be able to write a piece which modulates to another key and to analyze the phrase structure. *Prerequisite: MUS 1406. (3-2) 4

*MUS 2408 **Advanced Music Theory II:** A continuation of MUS 2407. Chromatic harmony is studied further by way of diminished seventh chords. Two and three part forms are discussed as well as advanced work in sight singing, dictation and keyboard. Upon completion of this course, students should be able to harmonize a modulating melody in baroque or

classical style and analyze the form of a simple work from those periods. *Prerequisite: MUS 2407. (3-2) 4

*MUS 2409 **Advanced Music Theory III:** A continuation of MUS 2408. Chromatic harmony is dealt with in ninth and altered chords, modulation to distant keys, and twentieth century styles. Overall form is studied and work is continued in sight singing, dictation and keyboard. Upon completion of this course, students should be able to analyze harmonically and melodically works in traditional style and to write a piece incorporating the above in twentieth century style. *Prerequisite: MUS 2408. (3-2) 4

Nursing, Assistant

*NUA 5806 **Nurse Assistant Skills I:** Upon completion of this course, students should be able to: provide for the hygienic and nutritional needs of patients; provide a safe environment for patients; utilize principles of body mechanics in giving patient care; demonstrate the ability to perform basic nursing skills and procedures; demonstrate effctive working relationships and appropriate behavior in the patient care setting; communicate appropriately in the clinical setting; follow policies and procedures of the clinical agency; accept responsibility for their own actions. *Prerequisite: Admission to the program; Corequisite: NUA 5807. (5-0-9) 8

*NUA 5807 **Nurse Assistant Skills II:** Upon completion of this course, students should be able to: demonstrate the ability to recognize and meet special needs of patients in relation to elimination, skin care, oxygen and other special therapies; meet the special needs of patients that relate to disease and aging processes; identify and practice infection control; recognize the implications of the grief process in relation to patient care. *Prerequisite: Admission to the program; Corequisite: NUA 5806. (5-0-9) 8

Nursing, Associate Degree

*NUR 3216 **Physical Assessment for Nurses:** Upon completion of this course, students should be able to: obtain a basic health history; assess the major body systems physically; recognize deviations from normal assessment findings; utilize physical assessment findings in making nursing judgments. *Prerequisite: NUR 3805 or consent of instructor; Corequisite: NUR 3904. (2-0-0) 2

*NUR 3305 **Nutrition for Nurses:** Upon completion of this course, students should be able to: identify the basic nutrients and basic nutritional needs of all age groups; describe the composition of common hospital diets; recognize the need for and interpret modified diets; demonstrate awareness of the role of the nurse in relation to the dietary needs of patients. *Corequisite: NUR 3805 or consent of instructor. (3-0-0) 3

*NUR 3704 **Fundamentals of Nursing I:** Upon completion of this course, students should be able to: formulate a working definition of nursing practice for the Associate Degree Nurse; value legal and ethical responsibilities of the nurse; develop a basic working knowledge of the nursing process; illustrate the relatedness of the biological, psychological, sociological and spiritual needs of the individual patient using Maslow's human need categories; distinguish between social and therapeutic communication; analyze the specific developmental tasks and related implications for nursing within each of Erikson's eight stages of development; examine changes that occur in the aging process; explain the nurse's responsibilities in administering therapeutic agents; explore selected concepts related to health and illness; adhere to practices which enhance patient welfare; demonstrate competency in performing selected standardized skills; tranfer knowledge gained in the classroom to clinical practice; develop an awareness of own learning needs. *Prerequisite: Admission to program; Corequisite: PSY 2504 and BIO 1504. (3-4-6) 7

*NUR 3805 **Fundamentals of Nursing II:** Upon completion of this course, students should be able to: explore selected principles and practices of nursing care for patients at various points along the health-illness continuum; formulate a working knowledge of selected biophysical concepts related to health and illness; examine the process of effecting change; develop selected interpersonal, technical, and intellectual skills necessary for applying the nursing process; demonstrate competency in performing selected standardized skills; transfer knowledge gained in the classroom to clinical practice; develop an awareness of own learning needs. *Prerequisite: NUR 3704, BIO 1504 and PSY 2504; Corequisite: NUR 3305, BIO 1505. (3-4-9) 8

*NUR 3904 **Care of the Adult Patient I:** Upon completion of this course, students should be able to: integrate knowledge learned from previous nursing and related courses to provide safe nursing care; demonstrate responsible professional behavior; apply biophysical concepts related to health and illness; utilize the nursing process to provide care for patients with disorders in acid-base balance, cellular function and proliferation, musculoskeletal and locomotion function, cardiovascular and hematologic function and metabolic and endocrine function; recognize legal and ethical implications for nursing; respond with appropriate attitude therapy to patient's behavior; demonstrate assertiveness in communicating with instructors, peers, and members of the health care team; administer oral, parenteral and/or other medications; perform standardized skills. *Prerequisite: NUR 3805, NUR 3305, BIO 1505; Corequisite: BIO 1503, NUR 3216 . (3-4-12) 9

*NUR 3905 **Care of the Adult Patient II:** Upon completion of this course, students should be able to: integrate knowledge learned from previous nursing and related courses to provide safe nursing care; explore selected principles and practices of nursing care for patients at various points along the health-illness continuum; discuss deviations from normal anatomy and physiology and the resulting clinical manifestations of selected adult health problems; develop selected interpersonal, technical and intellectual skills necessary for applying the nursing process; analyze the relationship between Erikson's last three stages of development and the health care needs of selected patients; explain the importance of moral, ethical and legal values in providing nursing care; explore the role of the nurse as a facilitator of self-care and an active member of the health care team; transfer knowledge gained in the classroom to clinical practice; actively pursue experiences which will enhance own learning needs; and apply the nursing process to care for patients with disorders of the imunologic system, connective tissue, gastrointestinal system, respiratory system and reproductive system. *Prerequisite: NUR 3904, NUR 3216, BIO 1503. (3-4-12) 9

*NUR 4304 **Nursing Perspectives:** Upon completion of this course, students should be able to: identify and discuss current issues in nursing; relate personal, legal, professional and ethical responsibilities to the practice of nursing; identify the roles and responsibilities of the Associate Degree Nurse upon graduation. These perspectives guide students toward their goal

of employment and/or sequential education after graduation. *Corequisite: NUR 4606, NUR 4505. (3-0-0) 3

*NUR 4390 **Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment will provide access to the resources of the entire institution. Each student will work under the supervision of a sponsoring staff member. *Prerequisite: Approval of sponsor and department head. (3-0) 3

*NUR 4505 **Nursing Practicum—Advanced Care:** Upon completion of this practicum, students should be able to: utilize the nursing process in providing individualized care for patients with selected health problems; provide total nursing care for assigned patients in an acute care setting; apply theoretical concepts in the clinical setting; employ effective interpersonal skills; demonstrate an ability to communicate verbally and in writing in a relevant and concise manner; perform selected standardized skills; administer medications to assigned patients; initiate patient teaching according to specfic learning needs of the patient; manage care for a small group of patients; demonstrate accountability when working with co-workers and patients; employ self-direction in meeting learning goals. *Prerequisite: NUR 3905; Corequisite: NUR 4606. (0-0-15) 5

*NUR 4606 **Advanced Care of the Adult Patient:** Upon completion of this course, students should be able to: discuss deviations from normal anatomy and physiology and the resulting clinical manifestations of selected adult health problems and emergencies; explore the nurse's role in the management of patients with selected health problems and emergencies; examine the responsibilities of a nurse manager; develop the intellectual, technical and interpersonal skills necessary for applying the nursing process to selected nursing problems; explore the interrelatedness of biological, psychological, sociological, cultural, and spiritual needs of the individual patient as described by Maslow; explain how knowledge of Erikson's last three stages of development can be incorporated into patient care; integrate moral, ethical, and legal values into nursing practice; appreciate the psychological needs of hospitalized patients at various points along the health-illness continuum; develop a commitment to continued learning in the medical-surgical content presented in the course. *Prerequisite: NUR 3905; Corequisite: NUR 4505. (5-2-0) 6

*NUR 4614 **Maternal-Neonatal Nursing:** Upon completion of this course, students should be able to: apply the concept of family-centered maternity care; assess the needs of the mother and family during the antepartal, intrapartal and postpartal periods and use this assessment as a basis for providing nursing care; teach health care to promote a physically safe delivery for mother and baby, and an emotionally satisfying experience for mother, father and baby; assess the newborn infant's needs and use the assessment as a basis for giving nursing care; teach the parents basic infant care; recognize signs and symptoms of the common obstetrical complications and take appropriate nursing action. Clinical learning experiences will coincide with classroom theory. Prerequisites: NUR 3905, PSY 2514. (3-2-6) 6

*NUR 4615 **Psychiatric Nursing:** Upon completion of this course, students should be able to: be aware of their own needs and responses based on personal experiences which influence behavior toward patients; provide basic support by understanding human behavior in the maladaptive dimension; be knowledgeable about basic mental health concepts which constitute a foundation for nursing interventions; initiate a problem-solving approach to utilize the nursing process in psychiatric nursing; understand the relevance of somatic as well as interactional therapy of treatment approaches and trends in psychiatric nursing; respond to the mentally ill patient with a high level of humane and informed nursing interventions. Prerequisite: NUR 3905, PSY 2514. (3-2-6) 6

*NUR 4915 **Nursing of Children:** Upon completion of this course, students should be able to: plan, implement and evaluate nursing care for children (infancy through adolescence) with common childhood diseases such as hereditary disorders, congenital anomalies, infectious diseases, accidental injuries, oncological disorders, endocrine disorders, musculoskeletal abnormalities, respiratory disorders and cardiovascular disorders; recognize both normal and abnormal growth and development and implement nursing care to meet the child's psychological needs; provide health care teaching for the pediatric patient and family. *Prerequisite: NUR 3905. (3-2-15) 9

Nursing, Practical

*NUP 5204 **Nursing Practicum—Basic Clinical Skills:** Upon completion of this practicum, students should be able to: apply basic biopsychosocial principles and nursing concepts to patient care; begin to utilize the nursing process to meet basic health needs of hospitalized adult patients; acuurately assess and document nursing actions; perform selected standardized skills for assigned patients; provide a safe and therapeutic environment; establish effective communication skills and interpersonal relationships; assume responsibility for their own behavior; develop awareness of their own learning needs. *Prerequisite: Admission to program; Corequisite: NUP 5300, NUP 5804, BIO 3301, HSA 5200. (0-0-6) 2

*NUP 5300 **Basic Principles of Drug Administration:** Upon completion of this course, students should be able to: discuss state and federal laws regulating the use of drugs; demonstrate competency in computing drug dosage utilizing selected systems of measurements; classify drugs according to therapeutic purposes; identify drug sources; discuss the various common drug forms; describe the nursing responsibilities associated with drug administration; prepare drug cards utilizing appropriate information and resources. *Prerequisite: Admission to program or consent of instructor; Corequisite: NUP 5804, NUP 5204. (3-0-0) 3

*NUP 5302 **Nursing Practicum III:** Upon completion of this practicum, students should be able to: transfer knowledge learned from related courses to patient care activities; utilize the nursing process as a basis for providing care for children from infancy through adolescence; perform selected standardized skills; accurately assess and document nursing actions; provide a safe and therapeutic environment; establish effective communication and interpersonal relationships; assume responsibility for their own behavior; develop awareness of their own learning needs. *Prerequisite: NUP 5705, NUP 5602, HSA 3421; Corequisite: NUP 5406. (0-0-9) 3

*NUP 5303 **Nursing Practicum IV:** Upon completion of this practicum, students should be able to: transfer knowledge learned in related courses to patient care activities; utilize the nursing process as a basis for providing care for mothers and newborn infants; perform selected standardized skills; demonstrate understanding of human sexuality, normal growth and development during pregnancy, and the processes of labor and delivery; accurately assess and document nursing actions;

provide a safe and therapeutic environment; establish effective communication and interpersonal relationships; assume responsibility for their own behavior; develop awareness of own learning needs. *Prerequisite: NUP 5705, NUP 5602, HSA 3421; Corequisite: NUP 5407. (0-0-9) 3

*NUP 5304 Nursing Seminar: Upon completion of this course, students should be able to: trace the historical development of nursing; discuss trends and issues in nursing; recognize how the law and ethical standards influence the practice of nurses and nursing; discuss the roles and responsibilities of the licensed practical nurse; explore career options; discuss purpose and functions of selected nursing organizations; recognize the need for continuing education to improve competency in nursing knowledge and practice. *Prerequisite: Admission to program or consent of instructor. (3-0-0) 3

*NUP 5390 Individual Study: This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment will provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. *Prerequisite: Approval of the sponsor and department head. (3-0-0) 3

*NUP 5406 Care of Infants and Children: Upon completion of this course, students should be able to: discuss biopsychosocial principles and nursing concepts associated with common medical and surgical conditions of children from infancy through adolescence; recall anatomical differences between the child and adult; identify stages of normal growth and development of children; compare the needs of the well child and the sick child; discuss nursing management for pediatric patients with selected health problems; explore the therapeutic communication techniques appropriate in working with child/parent; discuss principles related to selected standardized skills. *Prerequisite: NUP 5705, NUP 5602, HSA 3421; Corequisite: NUP 5302. (3-2-0) 4

*NUP 5407 Care of Mothers and Newborn Infants: Upon completion of this course, students should be able to: explain biopsychosocial principles and nursing concepts associated with the maternity cycle; discuss nursing management of the patient during the antepartal, intrapartal, and postpartal periods; discuss nursing management for the newborn infant; recognize deviations from the normal maternity cycle; discuss pharmacological and nutritional aspects related to the maternity cycle; recall principles from previously learned standardized skills. *Prerequisite: NUP 5705, NUP 5602, HSA 3421; Corequisite: NUP 5203. (3-2-0) 4

*NUP 5502 Nursing Practicum I: Upon completion of this practicum, students should be able to: transfer knowledge learned from related courses to patient care activities; utilize the nursing process as a basis for providing care for adult patients experiencing frequently occurring common health needs related to specific medical/surgical conditions; perform selected standardized skills; accurately assess and document nursing actions; provide a safe and therapeutic environment; establish effective communication skills and interpersonal relationships; assume responsibility for their own behavior; develop awareness of their own learning needs. *Prerequisite: NUP 5300, NUP 5804, NUP 5204, BIO 3301, HSA 5200; Corequisite: NUP 5703, NUR 3305, BIO 3302. (0-0-15) 5

*NUP 5602 Nursing Practicum II: Upon completion of this practicum, students should be able to: transfer knowledge learned from related courses to patient care activities; utilize the nursing process as a basis for providing care for adult patients experiencing frequently occurring common health needs related to specific medical/surgical conditions; perform selected standardized skills; accurately assess and document nursing actions; provide a safe and therapeutic environment; establish effective communication skills and interpersonal relationships; assume responsibility for their own behavior; develop awareness of their own learning needs. *Prerequisite: NUP 5703, NUP 5502, NUR 3305, BIO 3302; Corequisite: NUP 5705, HSA 3421. (0-0-18) 6

*NUP 5703 Care of Patients with Medical/Surgical Conditions I: Upon completion of this course, students should be able to: explore biopsychosocial principles and nursing concepts associated with frequently occurring common medical and surgical conditions; discuss the nursing management for adult patients with selected health problems; emphasize pharmacological, nutritional, and patient teaching principles as vital aspects of the nursing process; describe the nursing responsibilities for specific diagnostic and therapeutic measures; explain the principles of selected standardized skills; examine special problems and needs of the geriatric patient; develop an awareness of the ways in which an individual responds to illness. *Prerequisite: NUP 5804, NUP 5204, NUP 5300, BIO 3301, HSA 5200; Corequisite: NUP 5502, NUR 3305, BIO 3302. (5-4-0) 7

*NUP 5705 Care of Patients with Medical/Surgical Conditions II: Upon completion of this course, students should be able to: explore biopsychosocial principles and nursing concepts associated with common medical and surgical conditions; discuss nursing management for adult patients with selected health problems; describe the nursing responsibilities for specific diagnostic and therapeutic measures; recall the principles of selected standardized skills; recognize pharmacological, nutritional and patient teaching concepts as important aspects of patient care management. *Prerequisite: NUP 5703, NUP 5502, NUR 3305, BIO 3302; Corequisite: NUP 5602, HSA 3421. (5-4-0) 7

*NUP 5804 Introduction to Patient Care: Upon completion of this course, students should be able to: recognize the legal and ethical basis of nursing; appreciate the roles and responsibilities of the practical nursing student; identify therapeutic communication techniques; develop an understanding of the biopsychosocial principles and nursing concepts related to basic health care; list and define the steps in the nursing process; identify guidelines for reporting and documenting appropriate patient information; develop an awareness of safe parameters of nursing practice. *Prerequisite: Admission to program; Corequisite: NUP 5204, NUP 5300, BIO 3301, HSA 5200. (6-4-0) 8

Paralegal

LEX 3300 Case Analysis and Reasoning: The first course in a series of courses that studies the fundamentals of legal research, analysis and writing. Upon completion of this course, students should be able to: read and interpret court decisions, statutes and constitutions; write and use a composite brief; synthesize opinions; analogize opinions and fact situations. (3-0) 3

LEX 3310 North Carolina Legal System: This course examines the roles of state and federal judiciary in North Carolina through use of the United States and North Carolina Constitutions and the various applicable statutes. Upon completion of

this course, students should be able to describe and analyze the role of each court sitting in North Carolina. (2-2) 3

LEX 3320 Evidence: This course is an examination of the principal rules of evidence applicable in civil trials by jury at common law, their history, development and modern application, together with statutes affecting the field. Upon completion of this course, students should be able to: distinguish between direct and cross examination; explain the methods and limits of impeachment; utilize real and demonstrative evidence, prepare exhibits for introduction; identify proper introduction of opinion evidence; discuss the best evidence rule, presumptions, inferences and burden of proof; recognize hearsay and its exceptions; explain the importance of saving the record for appeal. (3-0) 3

***LEX 3404 Legal Research:** A continuation of LEX 3300. Upon completion of this course, students should be able to do basic legal research by using legal publications such as U.S.G.A., N.C.G.S., ORDINANCES, REPORTERS, DIGESTS, WORDS AND PHRASES, ENCYCLOPEDIAS, A.L.R., SHEPARDS, LOOSELEAF SERVICES, and C.F.R. *Prerequisites: LEX 3300 and admission to program. (2-4) 4

***LEX 3405 Legal Writing:** This course is a continuation of LEX 3404 and is designed to train students to express their research and analysis of legal problems clearly and effectively. Upon completion of this course, students should be able to apply the principles of expository prose and the rhetoric of persuasion to the kind of writing required in writing legal memos and two trial briefs. Each student shall write successfully a closed legal memo and an open legal memo. *Prerequisite: LEX 3404. (3-2) 4

LEX 4300 Domestic Relations Law: A course which examines the various laws of North Carolina that affect the marriage and family relationships such as statutory grounds for divorce, defenses to divorce actions, elements of separations by court order or by mutual consent, and custody of children. Upon completion of this course, students should be able to: discuss the various applicable statutes; interview the client and potential witnesses; aid the attorney in the drafting of divorce, custody and support pleadings, separation agreements, consent judgments, court orders and documents for adoption. (3-0) 3

LEX 4321 Tort Law: A study of the fundamental principles of the law on Torts. Upon completion of this course, students should be able to: recognize the more common intentional torts as negligence from various fact situations; explain the prima facie case for each; evaluate the defenses available to each. (3-0) 3

LEX 4322 Corporate Law: A study of the laws of North Carolina concerning partnerships and corporations. Upon completion of this course, students should be able to explain the basic concepts of corporations as compared to partnerships, joint ventures and sole proprietorships. Students should be able to aid the attorney in interviewing clients, drafting articles of incorporation, by-laws, minutes, resolutions, stock certificates, partnership agreements, joint venture agreements, and the proper filing of corporate and partnership documents. (3-0) 3

LEX 4331 Law Office Management: A study of effective organization and management skills in both small and large law offices. Upon completion of this course, students should be able to write an office manual as well as procedures manuals. They should be able to explain: the need for and methods of filing and indexing legal matters; the methods of opening new matter files; various accounting systems; time keeping systems and professional liability insurance. Students should also be able to examine other management problems existing in a law office. (3-0) 3

***LEX 4332 Trial Preparation and Procedures:** An in-depth study of legal drafting and the rules of Civil Procedure. Students who complete this course should be able to aid the attorney in the drafting of the various pleading, motions, orders, interrogatories and affidavits that are the ordinary components of civil actions. They should also be able to aid in the preparation of the file and exhibits for the trial. *Prerequisite: LEX 3404. (3-0) 3

LEX 4361 Interpreting Medical Reports: This is a self-paced course designed to acquaint students with the terminology, diagnosis and treatment of physical injuries most often seen in medical reports on personal injury cases. Upon completion of this course, students should be able to review and analyze the various medical reports sent to a law office on personal injury cases. (3-0) 3

LEX 4410 Collections and Bankruptcy: This course emphasizes a study of the laws and procedures of handling collections for clients and bankruptcy of clients, including study of the bankruptcy laws in effect as of October 1, 1979. Upon completion of this course, students should be able to develop and set up a collection system within a law office by aiding the attorney in drafting necessary form letters, complaints, liens and notices of sale. Students should also be able to interview the client, investigate the situation, and complete the bankruptcy package of documents. (3-2) 4

LEX 4420 Real Property Law and Title Abstracting: This course examines the laws of real property, common types of real estate transactions, and conveyances. Upon completion of the course, students should be able to: abstract a title, aid the attorney in the drafting of deeds, deeds of trust, mortgages and other documents necessary to real property transactions and closing statements; aid the attorney in completion of loan packages. Preparation of an abstract of title is a requirement of the course. (3-2) 4

***LEX 4430 Wills, Trusts and Probate:** This course emphasizes procedures concerning distribution of property by trusts, wills and intestacy. Upon completion of this course, students should be able to interview clients, use a wills manual, and aid the attorney in drafting wills and trusts, as well as complete the documents necessary to administer an estate. *Prerequisite: LEX 3404. (3-2) 4

***LEX 4431 Interview and Investigation:** This is a training course in various techniques of interviewing both clients and witnesses. Upon completion of this course, students should be able to: obtain medical records, official records and documents for preparation of client matters; research and design interview sheets and checklists for various legal matters and design in-house files for various legal matters. Students will develop interview sheets and will role play various interview situations as part of this class. *Prerequisite: LEX 3404. (3-2) 4

***LEX 4434 Legal Drafting:** This course is a continuation of LEX 3404 and LEX 3405. Upon completion of this course, students should be able to use form books, form files, rules of procedure, research and imagination to draft most letters and documents necessary in a private law office with the exception of those documents unique to an area of law taught in a separate course. *Prerequisite: LEX 3405. (3-2) 4

LEX 4520 Legal Ethics and Comprehension: This course must be taken during students' last quarter. The course is

divided into two parts. The first part analyzes the ethics of lawyer and staff. Upon completion of this part, students should be able to: explain the N.C. Unauthorized Practice of Law Statutes and how they apply to paralegals; contrast and compare the ABA Code of Professional Responsibility, the N.C. Canon of Ethics, and codes of ethics of the National Federation of Paralegal Associations and the National Association of Legal Assistants; identify authority that can and cannot be delegated by the attorney; discuss what constitutes proper supervision. The second part of the course consists of comprehensive exams on all law courses taken by students during their tenure in the program. (5-0) 5

Peer Tutoring—Advancement Studies

PTL 9000 Peer Tutoring Lab: This lab experience is designed to provide an opportunity for students to receive help from other students with tutoring in their course work plus additional instruction in study skills. The goal is to increase efficiency and effectiveness in academic endeavors of all persons involved. Tutoring is available in the majority of course areas. (0-3) 0

Personal Development—Advancement Studies

PER 9200 Self Power for Women: Is about projecting all the physical and mental power an individual woman has in creative, new ways. Upon completion, students should be able to establish their own programs of health, grooming and dressing habits in order to look and feel their best. The result is self-improvement, renewed confidence, and the awareness of the power inside each woman. The course objectives will be accomplished through participation in sessions on wardrobe and makeup selection, nutrition for health and beauty, speech awareness, body language, time and stress management. (2-0) 2

Pharmacy Technology

***PHM 5203 Hospital Practicum I:** Upon completion of this course, students should be able to: discuss the duties of a Pharmacy Technician; describe the structural, functional and interrelational aspects of the hospital pharmacy as a functional unit of a hospital; explain and demonstrate unit dose dispensing and record keeping. *Prerequisite: PHM 5302. (0-0-6) 2

PHM 5204 Community Pharmacy: Upon completion of this course, students should be able to: demonstrate a knowledge of procedures, operations and theories relating to community and retail pharmacy; identify "over-the-counter" products; explain prescription processing, pricing, business-inventory management, patient services; describe special health aide. (2-0-0) 2

PHM 5301 Pharmacology I: Upon completion of this course, students should be able to: identify drug nomenclature, dosage forms, administrative routes and body responses in basic pharmacology; recognize and explain the action of drugs used in the treatment of cardiovascular, endocrine and nervous systems. (3-0-0) 3

PHM 5302 Hospital Pharmacy I: Upon completion of this course, students should be able to: describe the organization and services of hospital pharmacies; use various pharmacy references; relate pharmacy law and regulations to the dispensing of drugs; prepare admixtures and unit doses; procure medication; prepare compound packages; and label drugs. (2-2-0) 3

***PHM 5303 Hospital Pharmacy II:** This course completes the study of the technical procedures including preparation and dispensing of drugs under the supervision of a pharmacist. Upon completion of this course, students should be able to perform: computerized dispensing; packaging and labeling; purchase and inventory control and bulk and sterile compounding. *Prerequisite: PHM 5302. (3-0-0) 3

***PHM 5306 Pharmacology II:** Upon completion of this course, students should be able to: explain use of antimicrobial agents, onchogenics and antineoplastics, vitamins, minerals and nutritive agents; describe action of drugs used in the treatment of the gastrointestinal, respiratory and genito-urinary systems. *Prerequisite: PHM 5301. (2-0-0) 2

PHM 5404 Pharmacy Math: Upon completion of this course, students should be able to: apply the metric, apothecary and avoirdupois systems of weight and volume to the preparation of drugs; demonstrate knowledge of measured quantities, calculations, pharmaceutical abbreviations and prescription and formulation format. (4-0-0) 4

***PHM 5406 Hospital Practicum III:** The objectives of this course are the same as for PHM 5505, Hospital Practicum II. Students will be assigned to another clinical site. Students have the option of completion both courses in one or two quarters. *Prerequisite: PHM 5505. (0-0-12) 4

***PHM 5505 Hospital Practicum II:** This course is designed to give students "on-the-job" training. At the completion of the course students should be able to: demonstrate with accuracy outpatient dispensing, inpatient dispensing, unit dose systems, IV admixture systems, bulk and sterile compounding and purchasing and inventory control. *Prerequisite: PHM 5203, PHM 5303. (1-0-12) 5

Philosophy

PHI 1500 Introduction to Philosophy: This course is an introduction to the basic problems of humankind and some philosophical solutions which emphasize those systems of thought which deal with these problems. Upon completion, students should be able to construct guidelines for decision making based on knowledge of the wisdom of past thinkers. (5-0) 5

PHI 2500 Logic: This course is an intensive study of the methodology of reasoning, including principles of induction and deduction, using symbolic logic. Upon completion, students should be able to recognize the inconsistency in any given line of reasoning, construct a persuasive argument based on reliable information regarding the subject matter. (5-0) 5

Physical Therapist Assistant

***PTH 3604 Introduction to Physical Therapy:** Upon completion of this course, students should be able to: describe the development, preparation and roles of physical therapy personnel and services; demonstrate awareness of physical therapy services appropriate to various clinical settings; identify clinical conditions commonly treated by physical therapy services;

relate the variety and interrelationships of medical and paramedical disciplines in meeting patient needs; demonstrate: basic aseptic techniques, safe transfer techniques using proper body mechanics, proper bed positioning of selected clinical conditions, and the ability to obtain the vital signs of temperature, pulse, respiration and blood pressure. *Prerequisite: acceptance into the program. (3-6-0) 6

*PTH 3624 **Physical Therapy Procedures I:** Upon completion of this course, students should be able to: demonstrate orally and in writing a basic knowledge of the different methods of heat transmission to the body, basic physics and terminology of low and high frequency currents utilized in physical therapy, the physical and physiological effects of heat (hot packs, low and high frequency currents), and the rationale of expected physical/physiological effects and indications/contraindications of the modalities being studied; demonstrate acceptable competence in the skill development laboratory through use of good body mechanics, performance of four therapeutic massage techniques, application of hot packs alone and combined with other modalities, and application of low and high frequency therapeutic currents. *Prerequisites: PTH 3604, BIO 1504. (3-6-0) 6

*PTH 3525 **Physical Therapy Procedures II:** During carefully planned and closely supervised clinical experiences, students who complete this course should demonstrate acceptable competence in: utilizing good body mechanics while performing safe patient transfer and treatment; applying procedures learned to date to include: hotpacks alone or combined with other modalities, massage techniques and low and high frequency therapeutic currents; recognizing patient physiological/psychological responses to treatment as appropriate or inappropriate; expressing a basic understanding of: clinical department operational procedures, specific patient diagnoses being treated, and the interrelationships of health facility departments and personnel. *Prerequisites: PTH 3624, PTH 3615, BIO 1505. (3-0-6) 5

*PTH 3526 **Clinical Problems in Physical Therapy:** Upon completion of this course, students should be able to: describe the basic pathophysiologic mechanisms contributing to disease and major disease processes; identify etiology, signs, symptoms, and complications of disease processes encountered by physical therapy services; recognize and describe the clinical picture, treatment program options, and the anticipated prognoses for pathological, orthopaedic, and neurological conditions treated by physical therapy measures; utilize case histories in a problem-solving approach for determining fundamental physical therapy treatment programs, recognize medications commonly utilized for the clinical/pathological conditions studied throughout the course. *Prerequisite: PTH 3615, BIO 1504, BIO 1505, MED 3304; corequisite: PTH 3525. (5-0-0) 5

*PTH 3615 **Applied Anatomy:** Upon completion of this course, students should be able to: describe and demonstrate major joint actions; identify the major muscles of these actions, their bony attachments and nerves; offer comparisons of expected strengths of joint actions; identify physiological components of the central and peripheral nervous systems; identify the major nerve plexuses as to spinal cord origins and muscular distributions. *Prerequisites: BIO 1504 and PTH 3604. (3-6-0) 6

*PTH 3714 **Therapeutic Exercise:** Upon completion of this course, students should be able to: identify the structural unit and recognize the physiological activities of muscle tissue; relate neuromuscular function or dysfunction to a number of clinical conditions; recognize the significance of joint range measurement and muscle strength evaluations for exercise programs; utilize problem solving methods in determining appropriate exercise techniques or transfer and ambulation activities; demonstrate the use of good body mechanics and proper patient safety measures in a variety of exercise, transfer and ambulation activities, and the correct application and use of appliances and equipment for patient exercise, transfer and ambulation procedures. *Prerequisites: PTH 3624 and PTH 3615. (3-8-0) 7

*PTH 4324 **Psychology of Adjustment:** Upon completion of this course, students should be able to: identify a variety of personality traits; recognize the value of utilizing various coping mechanisms by both the sick and the well; participate effectively in interpersonal relations as related to various stress situations; demonstrate recognition of the need for behavioral adjustments by both the health worker and the patient; relate the experience of another in adjustment to a disability. *Prerequisite: PTH 3525 or RTH 4814. (3-0-0) 3

*PTH 4334 **Community Health and Welfare:** Upon completion of this course, students should be able to: describe a community of interest for problem solving; define and offer appropriate examples of three categories of service agencies; list and explain four phases of health care; offer valid examples of governmental influences on the health and welfare system; identify at least five referral resources usually available to meet patient needs; describe in detail the organization of and services provided by one community agency. *Prerequisite: PTH 4627. (3-0-0) 3

*PTH 4344 **Seminar in Physical Therapy Procedures:** Upon completion of this course students, in consultation with program faculty, should be able to: locate and utilize appropriate reference material; carry out in-depth, comprehensive research of a specific topic relative to the physical therapy field; interview experts in the chosen topic and summarize the interviews in written form; develop and organize a seminar project notebook which presents and summarizes the relevant research; identify both positive and negative learning experiences encountered in clinical assignments. *Prerequisite: PTH 4728. Corequisite: PTH 4604 and PTH 4605. (3-0-0) 3

*PTH 4604 **Clinical Education I:** During systematically planned and supervised clinical learning experiences in a local health care facility, students who complete this course should be able to: accept the personal responsibilities of promptness, personal neatness and learning of departmental procedures and practices; develop and maintain positive rapport with patient and staff; provide assigned patient treatments competently, ethically and with efficient use of time; communicate effectively with others; relate theory and principles to treatments performed; utilize available time for learning and self-improvement. *Prerequisite: PTH 4728; corequisite: PTH 4605, PTH 4344. (0-0-18) 6

*PTH 4605 **Clinical Education II:** A continuation of Clinical Education I, with identical objectives in a clinical department away from Charlotte selected by the student from available facilities affiliating with the program. *Prerequisite: PTH 4728; Corequisites: PTH 4344, PTH 4604. (0-0-18) 6

*PTH 4627 **Physical Therapy Procedures III:** Upon completion of this course, students should be able to: identify and explain the physiological effects, indications and contraindications of the use of cold, paraffin and hydrotherapy procedures; demonstrate acceptable application of these same treatment procedures; perform carefully planned and supervised patient

care utilizing cold, paraffin and hydrotherapy measures as well as demonstrating increased competence in performance of all previously learned skills; show evidence of effective interpersonal relations and ethical conduct in the patient care setting. *Prerequisites: PTH 3525 and PTH 3714. (3-0-9) 6

*PTH 4728 **Physical Therapy Procedures IV:** Upon completion of this course, students should be able to: demonstrate a knowledge of radiant heat, its physical and physiological effect, indications/contraindications; employ radiant heat measures of infrared and ultraviolet in an acceptable manner; demonstrate knowledge of, and competence in, applying all modalities and procedures learned in the program, and interrelate these measures with specific clinical conditions; give evidence of acceptable knowledge about neuromuscular structures and function; demonstrate effective patient and staff interpersonal relationships and; when performing supervised patient assignments, coordinate all learning experiences to date for safe, appropriate and ethical patient care. *Prerequisite: PTH 4627. (3-0-12) 7

Physics

PHY 1300 Science and Society: This course is designed to make students more familiar with science as a part of cultural influence. Students will become aware of some of the most significant discoveries in the development of modern technological society, and their effect upon the art, politics, religion, etc. of the time. It is intended that students will become particularly aware of potential future conflicts between technology and humanism. (3-0) 3

PHY 1400 Science and Society: The same lecture as PHY 1300 with the addition of laboratory experience for physical science credit. Students will perform facsimiles of several classical experiments and become familiar with some basic laboratory apparatus. (3-2) 4

***PHY 1404 Physics I—Basic Mechanics:** The first course in the introductory physics sequence designed to meet the needs and interests of students in technology programs and students working towards bachelor's degrees in areas other than engineering, mathematics or physical science. Upon completion of this course, students will demonstrate proficiency in the use of the International System of units and have an understanding of the basic principles of linear motion, force, equilibrium, friction, energy, power and momentum. Their understanding will be demonstrated primarily by solving problems involving the fundamentals of these physical concepts. *Prerequisite: MAT 1504, MAT 3507, high school equivalent, or departmental permission. (3-2) 4

***PHY 1405 Physics II—Elastic and Thermal Properties of Matter:** A continuation of PHY 1404 which includes the study of such topics as rotational dynamics, elastic models, simple harmonic motion, thermal properties of matter, gas laws and heat transfer. During this course, students should master the terminology and the physical units used in these topics and be able to solve basic problems selected from these areas. *Prerequisite: PHY 1404. (3-2) 4

***PHY 1406 Physics III—Electricity and Magnetism:** The third course in the introductory physics sequence. Topics included are static electricity, electric fields and potential, simple DC circuits, simple AC circuits, magnetism and electromagnetic induction. These topics are treated with both a qualitative and a problem solving approach. *Prerequisite: PHY 1404. (3-2) 4

***PHY 1407 Physics IV—Modern Physics:** The last of the introductory physics sequence is an overview of the most significant discoveries in physics which have radically changed our views of nature since the nineteenth century. Beginning with general wave phenomena, the course progresses through em waves, physical optics, atomic structure, and a cursory treatment of the basics of quantum theory, relativity and nuclear processes. *Prerequisite: PHY 1404, PHY 1406 or departmental permission. (3-2) 4

PHY 1500 Introduction to Astronomy: This course introduces students to the historical development of astronomy, the basic tools and techniques of astronomy, and past and present cosmological models. Upon completion of this course, students should be able to: use an astronomical coordinate system and a star map to locate a prominent astronomical feature; describe the relative locations, motions and composition of the major components of the solar system; and briefly describe major cosmological phenomena such as red shift, pulsars, super novae, etc. (4-2) 5

***PHY 2504 General Physics I—Mechanics:** The first of a three-course sequence designed primarily for students majoring in physical science, engineering or mathematics. Upon completion of this course, students should be able to demonstrate an understanding of principles of kinematics, particle dynamics, energy and momentum, particularly through the solution of appropriate problems of a level requiring the use of calculus and vector analysis. *Prerequisite: MAT 1524 or departmental consent. (4-2) 5

***PHY 2505 General Physics II—Fluid Mechanics, Heat and Waves:** A continuation of the General Physics I with emphasis on elastic properties of matter, fluid statics and dynamics, thermodynamics, kinetic theory, and wave mechanics. Calculus is used extensively. *Prerequisite: PHY 2504. (4-2) 5

***PHY 2506 General Physics III—Electricity and Magnetism:** The third in the sequence of courses beginning with PHY 2504. Students completing this course should be able to solve rather rigorous problems in the area of electrical fields, current electricity and electromagnetic fields. *Prerequisite PHY 2505 or departmental consent. (4-2) 5

***PHY 2507 General Physics IV—Optics and Modern Physics:** This is the fourth course in the General Physics sequence which is designed for students majoring in physical science, engineering or mathematics. Upon completion of this course, students should be able to demonstrate conceptual understanding and the capability of solving problems involving electromagnetic oscillations, Maxwell's equations, geometric optics, optical spectra, the quantum, and nuclear emissions. *Prerequisite: PHY 2504, PHY 2506, or PHY 1404, PHY 1406 and strong math background. (4-2) 5

PHY 3414 Physics of Respiratory Therapy: Students completing this course should have an overview of basic principles related to properties of matter, energy. heat, gas laws and basic electricity, with particular emphasis on application to Respiratory Therapy. (3-2) 4

PHY 5304 Shop Science I: An introductory course in physics and its application covering systems and measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electromagnetism. The production, transmission, distribution, measurement and specific application of electrical energy also constitute major areas of study. Upon completion of this course, students will have demonstrated an

acceptable level of understanding by passing a series of mastery quizzes designed to cover each of the topics listed. (2-2) 3

PHY 5305 Shop Science II: A continuation of PHY 5304. Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Student mastery testing is again employed. (2-2) 3

Piano Tuning and Repair

PTR 5200 Piano Service Seminar: Upon completion of this course, students should demonstrate both orally and in writing an awareness of current practices in piano and piano parts design and construction. A seminar will take place at least once per month to be conducted by invited representatives of particular piano manufacturers or will involve tours to manufacturing plants and tuning demonstrations on pianos of various makes off-campus. (2-0) 2

PTR 5210 Piano Actions: Upon completion of this course, students should be able to identify various types of actions and demonstrate an understanding of the construction and function of hammers, dampers, flanges, bushings, keys and felts. (0-6) 2

PTR 5211 Vertical Regulation: Upon completion of this course, students should be able to make minor repairs and regulation of all parts as they interact with one another (dampers, pedals, hammers, action and key depths). (1-3) 2

PTR 5212 Hammer Replacement: Upon completion of this course, students should be able to voice, reshape, adjust or replace hammers. (1-3) 2

PTR 5213 Grand Regulation: Upon completion of this course, students should be able to make precise adjustments and minor repairs of Grand Piano Actions including repetition, sostenuto and damper systems, refelting and bedding of the key frame and leveling of the keys. (1-3) 2

PTR 5214 Restringing: Upon completion of this course, students should be able to measure, replace, restore, splice and evaluate tone quality and clean strings. (1-3) 2

PTR 5300 Piano Technology—The Instrument and Tools: Upon completion of this course, students should be able to identify the different types of pianos, the parts of the piano and their functions; identify tools and their correct usage; use correct terminology; discuss the history and development of the piano and its predecessors, the harpsichord and clavichord. (3-0) 3

PTR 5301 Piano Technology—The Technician: Upon completion of this course, students should demonstrate both orally and in writing the ability to list necessary steps for becoming a Piano Technician, the ability to diagnose piano problems for the customer, and the essential steps necessary for establishing and maintaining a satisfied clientele. (3-0) 3

PTR 5330 Tuning Practicum (Piano): Supervised fiield training. (0-9) 3

PTR 5607 Fundamentals of Tuning I: Upon completion of this course, students should be able to demonstrate the correct use of the tuning fork, the tuning hammer, and an understanding of the tuning of unisons and octaves. (2-12) 6

PTR 5608 Fundamentals of Tuning II: Upon completion of this course, students should be able to demonstrate improvement in tuning unisons and octaves; to demonstrate the Faust procedure of equal temperament, using thirds and sixths, fourths and fifths, to demonstrate greater competence in tuning extreme treble and bass. (2-12) 6

PTR 5709 Intermediate Tuning: Upon completion of this course, students should be able to demonstrate a working knowledge of the processes of tuning, i.e., alternative aural temperaments and introduction to progression of intervals, and using tests to prove intervals. (3-12) 7

PTR 5710 Advanced Tuning: Upon completion of this course, students should be able to stabilize tuning pins, raise pitch, demonstrate a working knowledge of interval tests, and tune for general and specialized use; demonstrate the use of an electronic tuning aid. (2-12) 6)

Political Science

POL 1502 American Politics: Students will analyze the three branches of American national government and the ways in which they interact with each other, and with political parties, interest groups and the electorate in political decision making. (5-0) 5

POL 1510 Introduction to Comparative Politics: Students will compare and contrast decision-making in several Western and non-Western, industrial and less developed, democratic and authoritarian political systems. (5-0) 5

POL 1511 Introduction to International Relations: Students will identify and analyze patterns in relations among nations, and explain the effects on international relations of differing national perspectives, "power," international law, international organizations, the "balance of power" and the "balance of terror." (5-0) 5

POL 2500 State and Local Politics: Students will analyze political decision-making in the states and local areas, emphasizing in their analysis: changing relations between the federal government, states and cities; the decline of southern sectionalism and big city political machines, the rise of suburban areas, citizen action groups, and new forms of metropolitan government. (5-0) 5

POL 2501 Political Ideologies: Students will explain the functions of political ideology, and describe the beliefs and practice of communism, socialism, fascism, capitalism and democracy in the politics and socio-economic structure of various nations. (5-0) 5

***POL 2104-2504 Special Topics in Political Science:** Students will examine particular topics of political interaction and decision-making in areas not covered in standard courses. Course objectives vary with the subject matter studied. *Prerequisite: Consent of instructor and department head. (1 to 5 hrs. class/week—1 to 5 hrs. credit).

Postal Service Technology

PSM 3300 Postal Service History and Organization: Upon completion of the course, students should be able to: trace the delivery of written communication and merchandise from earlier eras to the present; depict and compare the private, corporate and governmental agencies which have been responsible for mail service; define the current postal organization as mandated by Public Law 91-375; trace and explain postal philosophies, policies, procedures, rules and regulations of the current organization; demonstrate an understanding of the history and organization of the Postal Inspection Service. (3-0) 3

PSM 3401 Postal Service Labor Management: This course presents an overview of laws and practices as related to Labor Management in the Postal Service. Upon completion of this course, students should be able to discuss: the development of labor unions of Postal Service employees with emphasis on the National and Local agreements, the various bargaining units and associations in the U.S. Postal Service, the grievance procedures, the disciplinary action procedures, and the National Labor Relations Board. (3-2) 4

PSM 3404 Mail Processing I: Upon completion of this course, students should be able to explain and interpret: the mail classifications and rates, service standards, postal terminology, the four functions of mail processing, distribution systems, mail processing objectives and responsibilities, the mail preparation operation, manual distribution, revenue protection and the bulk mail centers. (3-2) 4

PSM 3405 Mail Processing II: Upon completion of this course, students should be able to explain and interpret: postal mechanization, machine distribution, human resources management in mail processing, reporting systems and data analysis, operational planning, scheduling and staffing, budgeting, and functional coordination with customer services. (3-2) 4

PSM 4401 Postal Service (Support) Finance: Upon completion of this course, students should be able to explain: how postal revenue is received and controlled, procedures of the Board of Governors and the Postal Rate Commission, and the Postmaster General's Annual Report, as well as budgeting, financial accounting and reporting, timekeeping, travel regulations and Administrative Services. (3-2) 4

PSM 4420 Postal Employee Services: Upon completion of this course, students should be able to explain: the functions of the Personnel Office in relation to the services it provides for postal employees including policies and practices concerning selection, placement, training, promotion of employees, self-development training programs, EEO practices, insurance and retirement benefits, awards programs, salary schedules, and safety and health. (3-2) 4

PSM 4421 Postal Customer Services: This course is designed to provide students with an in-depth knowledge of all services provided for postal customers. Upon completion, students should be able to explain effective customer relations, retailing postal products, and non-postal services including professional window service operations and the duties of customer service representatives. (3-2) 4

PSM 4430 Postal Delivery and Collection: This course is designed to provide a functional knowledge of mail delivery and collection systems within the Postal Service through the use of two management training programs: "Method Improvement Plan/Standard Operating Procedures" and "Route Inspections and Evaluations." Upon completion, students should be able to state and explain the duties, responsibilities and skills required in the Carrier Crafts and the Management of Rural Delivery Service. (3-2) 4

PSM 4431 Postal Problem Analysis: This course presents actual postal problems for analysis and solution. Upon completion, students should be able to utilize the systematic approach to problem solving: identify the problem, determine and analyze the dimensions of the problem; assess adverse consequences of the problem; determine and analyze alternative solutions; specify and defend the best solution to the problem. (3-2) 4

Psychology

PSY 1500 Psychology of Adjustment: Upon completion of this course, students will be able to identify various stress situations encountered in life and strategies useful in meeting these situations. Areas of adjustment which will be emphasized are self-concept, assertive and aggressive behavior, interpersonal relations, stress and abnormal behavior. (5-0) 5

PSY 2500 Educational Psychology: Upon completion of this course, students should demonstrate a knowledge of learning, motivation and development as these relate to classroom teaching. Students should also demonstrate a knowledge of testing, evaluation and assessment. (5-0) 5

PSY 2504 General Psychology: An introductory course which may be taken in either a self-paced or conventional manner. Upon completion of this course, students should demonstrate a knowledge of the basic concepts of psychology, the use of these concepts as employed by the major theorists, and the practical and therapeutic application of these concepts. (5-0) 5

***PSY 2505 Human Development:** Upon completion of this course, students should demonstrate a knowledge of the physical, psychological, social and intellectual development of humans from conception to death. *Prerequisite: PSY 2504. (5-0) 5

***PSY 2514 Abnormal Psychology:** Upon completion of this course, students should be able to identify the major forms of mental illness as described in the DSM III, the etiology of mental illness and the preferred methods of treatment. *Prerequisite: PSY 2504. (5-0) 5

PSY 2524 Mental Retardation: Upon completion of this course, students should demonstrate a knowledge of the biological, psychological and sociological aspects of mental retardation. They should also demonstrate knowledge of diagnosis, treatment and education of the mentally retarded. (5-0) 5

***PSY 2136-2536 Special Topics in Psychology:** A number of selected topics will be presented to the class for examination and evaluation. Each student will complete a research project in an area of special interest, upon approval by, and under the direction of the instructor. *Prerequisite: Consent of department head and instructor.
(1-5 hrs. class/week—1 to 5 hrs credit)

PSY 3314 Principles of Humanistic Psychology: Upon completion of this course, students should demonstrate a knowledge of what constitutes a healthy personality as described by the major humanistic theorists. (3-0) 3

Reading—Advancement Studies

RDN 9130 Basic Reading Skills: This individualized reading course is designed for students who need basic reading skills. Upon completion of this course, students should be able to demonstrate: a sixth grade reading level on a standardized test; mastery of basic phonics; mastery of meaning of a passage written on a sixth grade level. (0-3) 1

RDN 9212 Reading for College: This course is designed to provide students preparing for college with basic study skills and rate improvement. Upon completion, students will demonstrate increased reading efficiency, vocabulary, comprehension

and study skills, including textbook reading, test taking and note taking. (2-0) 2

RDN 9302 Advanced Vocabulary Improvement: This course is designed for adults who need non-specialized, college-level vocabulary improvement to enhance communication skills and to raise scores on standardized vocabulary tests. Upon completion of this course, students will demonstrate mastery of common Latin prefixes and roots, synonym shading, word analogies, connotation-denotation. (3-0) 3

RDN 9312 Speed Reading: An individualized, self-paced course designed to meet the needs of students, and lay and professional members of the community, who want to increase speed in reading. Upon completion of this course, students should demonstrate a 100% increase in reading rate while maintaining an 80% level of comprehension as assessed by a standardized reading test. (3-0) 3

RDN 9502 Building Word Power: This is a reading course for adults who want basic vocabulary development in a structured, but flexible course to help them succeed in other reading, English and math developmental courses. Upon completion of this course, students will demonstrate knowledge of common Latin and Greek roots and prefixes, including mastery of root and prefix meanings, identification and use of word derivatives in English and application to new vocabulary. (5-0) 5

RDN 9505 Reading Skills: This individualized course in reading is designed for adults who need fundamental skill development to understand and learn from written material. Upon completion of this course, students should demonstrate mastery of basic vocabulary, comprehension and study skills. (5-0) 5

RDN 9510 Reading Improvement: Upon completion of this individualized course, students should be able to: choose and implement a system for long-range vocabulary development; find main ideas in given passages; draw inferences from those ideas; evaluate conflicting ideas to discover bias; study-read a college textbook. (5-0) 5

Real Estate

***RES 3360 Real Estate Property Management:** This introductory course surveys the management of rent-producing retail, office and apartment properties to achieve investment objectives of client owners. Upon completion of this course, students should be able to describe the management industry and profession; estimate financial benefits to property owners; illustrate utilization of the management plan; explain the manager's relations with client owners; discuss marketing, leasing and tenant administration; describe techniques for staffing, operating and maintaining properties; discuss the basics of operating a management office; locating clients and negotiating management contracts. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or a current N.C. real estate license, or consent of division head. (3-0) 3

***RES 3364 Residential Real Estate Appraisal I:** This course and RES 3365 provide students a foundation for the valuation of residential property. Upon completion of this course, students should be able to recognize how the four major forces influence real estate values; explain how basic economic concepts underlie real estate valuation; define market value; describe the valuation appraisal process; state sources of appraisal data and information; outline a narrative appraisal report; describe how to make neighborhood and site analyses and site valuations; identify principal structural components of houses; estimate reproduction costs and accrued depreciation; estimate market values of single-family residences by market data, cost and gross-rent-multiplier approaches. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or current N.C. real estate license, or consent of division head. (3-0) 3

***RES 3365 Residential Real Estate Appraisal II:** This course combines the study and application of appraisal principles and techniques in both the classroom and the field. In order to complete the course, students are required to execute the valuation appraisal process for an assigned existing single-family residence and submit a written narrative appraisal report. *Prerequisite: RES 3364. (3-0) 3

RES 3660 Fundamentals of Real Estate (Salesman Prelicensing): This course provides students with basic knowledge and skills necessary for entry-level salesmen and assists students to prepare for the state real estate salesman licensing examination. In order to complete the course, students must demonstrate satisfactory knowledge and understanding of principles and practices in the following subject areas, and the ability to solve practical situational and mathematical problems based thereon: basic real estate concepts; property ownership and interests; transfer of title to real property; title assurance and property descriptions; land use controls; real estate brokerage and the law of agency; fair housing legislation; basic contract law, listing contracts and contracts for the sale of real estate; landlord and tenant and leases; N.C. Real Estate License Law, Commission Rules/Regulations and Trust Account Guidelines; mortgages, deeds of trust and real estate financing practices; closing real estate transactions; basic residential building construction; real property valuation; real estate management; property insurance; federal income tax implications of home ownership. (6-0) 6

Important Note Concerning Educational Requirements for Real Estate Broker License Applicants: Persons who apply for real estate broker licenses on the basis of real estate education at CPCC will be required by the North Carolina Real Estate Commission to have started and completed the following courses within five years preceding the filing of an Application Form: RES 3660 (see above) and RES 4361, RES 4362 and RES 4363 (see below).

***RES 4361 Real Estate Law (Broker Prelicensing):** This course provides students with knowledge of real estate law necessary for entry-level real estate brokers. In order to complete the course, students must demonstrate satisfactory knowledge and understanding of principles and practices in the following subject areas, and the ability to solve practical situational and mathematical problems based thereon: introduction to real estate law; property ownership interests, including real estate taxes; transfer of title to real property; land use controls; real estate brokerage and the law of agency; real estate contracts; landlord and tenant; federal income taxation of real estate; License Law, Commission Rules/Regulations and Trust Account Guidelines; securities law; closing real estate transactions. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or a current N.C. real estate license, or consent of division head. (3-0) 3

***RES 4362 Real Estate Finance (Broker Prelicensing):** This

course provides students with knowledge of financing real estate transactions necessary for entry-level real estate brokers. In order to complete the course, students must demonstrate satisfactory knowledge and understanding of principles and practices in the following subject areas, and the ability to solve practical situational and mathematical problems based thereon: financing instruments; types of mortgage loans; sources of mortgage funds; the secondary mortgage market; loan underwriting; consumer legislation affecting real estate financing; real property valuation. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or a current N.C. real estate license, or consent of division head. (3-0) 3

*RES 4363 **Real Estate Brokerage Operations (Broker Prelicensing):** This course provides students with the basic practical knowledge of real estate brokerage operations necessary to enable entry-level real estate brokers to operate or manage a real estate brokerage practice in a manner which protects and serves the public interest. In order to complete the course, students must demonstrate satisfactory knowledge and understanding of principles and practices in the following subject areas, and the ability to solve practical situational and mathematical problems based thereon: introduction to real estate brokerage operations; establishing a brokerage firm; management; personnel; operations; records and bookkeeping system; financial operations. *Prerequisite: RES 4361 and RES 4362 or completion of equivalent prelicensing courses approved by the N.C. Real Estate Commission, or a current N.C. real estate license, or consent of division head. (3-0) 3

*RES 4364 **Government Land Use Controls in Brokerage:** This course surveys regulations of great importance in the development and use of land. It helps brokers and salesmen learn how to obtain and provide purchasers reliable information on purposes for and conditions under which land may be used. Upon completion of this course, students should be able to state the principal functions of the local planning commissions and departments of zoning, building standards and environmental health and other agencies involved in controlling land use; discuss the contents and implementation of county long range plans, zoning and subdivision ordinances, and other regulations of land use; explain procedures for obtaining zoning amendments, variances and special use permits; state how to determine the uses for which a given tract of land may be developed and the kinds of improvements permitted and required on it. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or current N.C. real estate license, or consent of division head. (3-0) 3

*RES 4365 **Building a Successful Real Estate Sales Career:** This course is designed to help residential real estate brokerage students prepare to achieve high listing and sale productivity. Upon completion of this course, students should be able to set realistic personal productivity goals; establish a personal time-management system; describe methods for obtaining and servicing listings, including farming and FSBO cultivation; write ads and understand advertising strategies; develop a marketing plan; describe methods to obtain prospective buyers; qualify buyers; demonstrate proper telephone techniques; describe techniques for showing properties, obtaining purchase offers and closing sellers; explain how to build a personal referral service. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or current N.C. real estate license, or consent of division head. (3-0) 3

*RES 4367 **Income Real Estate Appraisal I:** This course and RES 4368 familiarize students with the income approach to estimating the market value of real estate. Upon completion of this course, students should be able, given appropriate data and information, to do the following for a various types of income-producing property: estimate gross income and operating expenses; prepare a reconstructed operating statement; explain and estimate applicable interest, recapture and capitalization rates; use present-value mathematics and a financial calculator in solving appraisal problems; extract rates from market data for economically comparable properties; calculate estimates of market value using gross income multipliers and direct capitalization; use band of investment, mortgage-equity components and debt service coverage factors in appraisal; calculate values by residual techniques. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or current N.C. real estate license, or consent of division head. (3-0) 3

*RES 4368 **Income Real Estate Appraisal II:** Upon completion of this course, students should be able to use mortgage-equity and discounted-cash-flow methods to capitalize projected net income streams and reversions to properties into estimates of market value. These methods include yield capitalization and cash flow analysis, and take into account the availability and terms of current financing on value. These methods deal with both level and irregular net income streams. The calculations require that students become proficient in using a financial calculator to solve appraisal problems. *Prerequisite: RES 4367. (3-0) 3

*RES 4369 **Commercial Real Estate Finance:** This course is designed to help students and practicing professionals gain knowledge in assembling, analyzing and presenting requests for the financing of commercial real estate projects. The real estate practitioner should acquire increased professional understanding of the analytical methods and techniques utilized in commercial real estate finance as well as a working knowledge of the factors involved in a request for financing a project. Upon completion of this course, students should be able to: assemble information necessary and sufficient for preparing a satisfactory loan presentation package; analyze the data to ascertain project feasibility and insure completeness; prepare a presentation request for a commercial real estate loan; attain, through negotiation and interviewing techniques, a degree of comfortable competence in assisting the borrower to present the loan request to the lending institution. *Prerequisite: RES 4374, or equivalent education and/or experience with consent of division head. (3-0) 3

*RES 4374 **Real Estate Investment Analyses and Computer Techniques:** This course is designed to help students acquire knowledge and skill in analyzing and marketing investment real estate. It includes demonstration of applications of a personal computer. Upon completion of this course, students should be able to do the following in connection with a particular investment property: specify the data and information needed to carry out an investment analysis; estimate projected gross income to, operating expenses for, and net operating income to the property; estimate effects of financing to obtain before-tax cash flow to equity; estimate effects of ordinary income tax to obtain after-tax cash flow to equity; estimate proceeds of resale after capital gains tax; calculate both internal and financial-management rates of return on investment; prepare an appropriate

report of the findings of the investment analysis. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or a current N.C. real estate license, or consent of division head. (3-0) 3

*RES 4375 **Commercial and Industrial Real Estate:** This course is designed to help students gain knowledge in selling, leasing and managing commercial and industrial real estate. The real estate practitioner should acquire increased professional understanding of commercial and industrial development and marketing, and of brokerage office operations. Upon completion of this course, students should be able to: discuss and explain those unique characteristics of commercial and industrial properties which are of importance from the viewpoints of users, investors, lenders, developers and community planners; demonstrate decision-making ability in situations applicable to selecting, leasing, investing capital, developing, marketing and managing commercial and industrial properties; show an understanding of brokerage office operations. *Prerequisite: RES 3660, or completion of a salesman prelicensing course approved by the N.C. Real Estate Commission, or a current N.C. real estate license, or consent of division head. (3-0) 3

Respiratory Therapy Technology

*RTH 3202 **Introduction to Pathology and Physical Diagnosis:** Upon completion of this course, students should be able to define terms used in respiratory pathology and diagnosis; use a stethoscope to identify normal and abnormal breath sounds and make clinical correlations; recognize normal anatomical landmarks and common abnormalities associated with chest radiographs; demonstrate knowledge of anatomy of upper and lower airway; gather pertinent information from a patient's chart to include history, physical exam, and laboratory data; describe the technique and uses of diagnostic procedures including sputum exam, endoscopy, bronchoscopy, pulmonary angiography, lung scanning, computerized tomographic scanning, pulmonary function studies, arterial blood gases; list and describe diseases of the upper respiratory tract; recognize and discuss the etiology, pathology, lab findings, and clinical manifestations of infectious diseases of lower respiratory tract including viral, mycoplasma and bacterial pneumonias. *Prerequisite: Entrance into program; corequisite: RTH 3807. (2-0-0) 2

*RTH 3304 **Pathology and Physical Diagnosis:** Upon completion of this course, students should be able to: explain the pathology of chronic obstructive and restrictive pulmonary diseases; list the various types of pulmonary carcinomas; discuss the physiologic alterations of the lung caused by extra-pulmonary sources; explain and list conditions of the nervous system which could lead to respiratory failure; recognize and list causes of ARDS; explain the pathology and clinical findings in disorders of pulmonary diseases due to mycobacteria; explain the differet immunologic diseases of the lung; discuss the nutritional status of critical care patients; recognize normal and abnormal lab values; explain and discuss the general pathologic processes of renal failure, liver failure and diabetes. *Prerequisite: RTH 3202; corequisite: RTH 3305, RTH 3714. (2-2-0) 3

*RTH 3305 **Respiratory Pharmacology:** Upon completion of this course, students should be able to: apply general principles of pharmacology—terminology and mechanisms of drug action; use current reference standards; read and interpret a prescription; compute dosages, determine ratios and percents, and prepare solutions for aerosol administration; describe the pharmacology of airway dilators; describe the pharmacology of mucokinetic substances, their preparation and method of administration; list and describe antibiotics used in the treatment of pulmonary infections; explain the pharamcologic effects of drugs commonly seen in overdose situations; explain the mechanism of action and list commonly used muscle relaxants; explain the mechanism of action and list commonly used drugs affecting central respiratory centers including commonly encountered drugs producing sedation, hypnosis, anesthesia, and stimulants; diagram or otherwise discuss normal renal function and explain the mechanism of action of commonly used diuretics; discuss corticosteroids in respiratory care; discuss the pharmacologic effects of cardiovascular agents; give basic description and pharmacologic effects of prostaglandins. *Prerequisite: RTH 3807; corequisite: RTH 3304, RTH 3714. (3-0-0) 3

*RTH 3714 **Respiratory Therapy Procedures I:** Upon completion of this course, students should be able to: identify clinical situations requiring and properly apply humidity and aerosol devices with associated oxygen delivering capabilities; describe normal mucus clearing mechanisms; discuss normal humidification by airway; assemble and compare nebulizers and humidifiers and discuss their function; describe hazards associated with humidity and aerosol therapy; calibrate and operate selected positive pressure breathing devices; summarize and discuss indications, hazards, implementation and methods of monitoring IPPB therapy; discuss types of and correct procedure for administering incentive breathing devices; list indications and contraindications of bronchopulmonary drainage, chest percussion and chest vibration; correctly perform the basic steps of physical examination to include reviewing and gathering data from patient record, inspection and palpation and auscultation. *Prerequisite: RTH 3807, BIO 1504, MAT 3504. (2-4-9) 7

*RTH 3805 **Respiratory Therapy Procedures II:** Upon completion of this course, students should be able to: read and interpret results from arterial blood gas analysis; perform and evaluate methods of bronchopulmonary drainage; identify and use artificial airways; manage the airways of patients requiring artificial airways; recognize complications and describe procedures designed to prevent complications of patients with artificial airways; complete a comparative assessment of and use manual resuscitators; calibrate and use selected gas analyzers; become certified by the AHA in basic life support. *Prerequisite: RTH 3714, BIO 1505; corequisite BIO 3404. (3-4-9) 8

*RTH 3807 **Introduction to Respiratory Therapy:** Upon completion of this course, students should be able to: describe the major developments in medicine and science as they relate to the historical aspects of respiratory therapy; list and describe the professional and accrediting organizations; explain the roles and responsibilities of the various respiratory therapy practitioners; use the English and metric systems of measurement interchangeably; define and use medical terms; read a patient chart; utilize physical laws describing the behavior of gases applicable to respiratory care; recognize, evaluate and recommend methods of treating oxygenation abnormalities; assemble, operate and supply equipment used to administer medical gas therapy; describe the functions and interdependence of the cardiovascular and respiratory systems. *Prerequisite: admission to Respiratory Therapy Technology program. (4-4-6) 8

*RTH 4417 **Neonatal and Pediatric Respiratory Care:** Upon completion of this course, students should be able to:

compare fetal and neonatal cardiopulmonary anatomy and physiology; list maternal risk factors; describe newborn scoring systems; relate the events of birth in terms of ventilation and perfusion; describe indications and techniques for neonatal resuscitation; list the common causes of acute respiratory failure in neonates; discuss the rationales of ventilatory support in neonates; review considerations in stabilizing and transporting neonates; write a case report; delineate the special respiratory care needs of children; list the common causes of acute respiratory failure in children. *Prerequisite: RTH 4814; corequisite: RTH 4724, PTH 4324. (2-0-6) 4

*RTH 4504 **Pulmonary Function I:** Upon completion of this course, students should be able to: measure and evaluate static and dynamic lung function including the following tests: volumes, capacities, flowrates, diffusion capacity, and dead space to tidal volume ratio; describe and evaluate tests of small airway function; classify and describe a quality control protocol for spirometers, gas analyzers, and pH/blood gas analyzers; explain the rationale and techniques of polysomnography; describe tests of airway reactivity; describe normal and abnormal responses to exercise and explain techniques of exercise testing. *Prerequisite: RTH 4724, COM 1304; corequisite: RTH 4605. (2-0-9) 5

*RTH 4605 **Pulmonary Function II:** Upon completion of this course, students should be able to: measure and evaluate static and dynamic lung function including the following tests: volumes, capacities, flowrates, diffusion capacity, and dead space to tidal volume ratio; describe and evaluate tests of small airway function; classify and describe a quality control protocol for spirometers, gas analyzers, and pH/blood gas analyzers; explain the rationale and techniques of polysomnography; describe tests of airway reactivity; describe normal and abnormal responses to exercise and explain techniques of exercise testing. *Prerequisite: RTH 4724; corequisite: RTH 4504. (2-2-9) 6

*RTH 4606 **Clinical Applications I:** Upon completion of this course, students should be able to: provide respiratory care to patients in an intensive critical care unit; participate in emergency situations while maintaining an airway and breathing for the patient; provide intensive respiratory care to the infant and pediatric patient; discuss the role of supervisory personnel; discuss the ethical considerations of respiratory care; participate in the delivery of respiratory care in the home; outline a program of cardiorespiratory rehabilitation, become certified by the AHA as an instructor in BLS. *Corequisite: RTH 4607. (2-0-12) 6

*RTH 4607 **Clinical Application II:** Upon completion of this course, students should be able to: provide respiratory care to patients in an intensive critical care unit; participate in emergency situations while maintaining an airway and breathing for the patient; provide intensive respiratory care to the infant and pediatric patient; discuss the role of supervisory personnel; discuss the ethical considerations of respiratory care; participate in the delivery of respiratory care in the home; outline a program of cardiorespiratory rehabilitation; become certified by the AHA as an instructor in BLS *Prerequisite: RTH 4605, COM 3305, SPH 1300; corequisite: RTH 4606. (2-0-12) 6

*RTH 4415 **Equipment for Continuous Ventilation:** Upon completion of this course, students should be able to: classify selected ventilators; discuss compliance and how it relates to ventilator performance; list and describe the cycling mechanism and mode of operation of selected ventilators; trace gas flows from power source to patient in selected ventilators; identify parts of selected ventilators which can be sterilized and list the best method of sterilization for that particular part; list testing procedure for selected ventilators prior to patient use. *Prerequisite: RTH 3805; corequisite: RTH 4814, PHY 3414. (3-2-0) 4

*RTH 4724 **Continuous Ventilation:** Upon completion of this course, students should be able to: list indications for using mechanical ventilation; given flow and pressure patterns, identify the type ventilator exemplified; list clinical situations requiring the use of volume controlled ventilators; explain the indications and procedures for weaning patients from ventilators; explain the indications and procedures for establishing intermittent mandatory ventilation, positive end expiratory pressure, expiratory resistance and inspiratory plateau; interpret arterial blood gas values and make appropriate ventilator changes. *Prerequisite: RTH 4415; corequisite: RTH 4417, PTH 4324. (3-0-12) 7

*RTH 4814 **Introduction to Emergency and Intensive Respiratory Care:** Upon completion of this course, students should be able to: identify and recognize nosocomial infections and recommend effective methods of infection control; participate in a hospital equipment processing program; monitor correctly parameters of ventilation; demonstrate ability to establish, maintain and recognize normal and abnormal data associated with invasive cardiovascular procedures; perform endotracheal intubation on an adult and infant model; obtain and analyze an arterial blood sample; demonstrate ability to maintain and monitor established airways. *Prerequisite: RTH 3807, BIO 1503. (4-2-9) 8

Russian

RUS 1600 **Elementary Russian I:** Upon completion of this course, students should be able to use the Cyrillic alphabet, the basic declensions of nouns. pronouns and adjectives and some conjugations of verbs. With a knowledge of some basic vocabulary, students should be able to apply these constructions in simple grammatically correct sentences orally as well as in written composition. Students should be able to translate simple sentences from Russian into English and English into Russian. (5-2) 6

*RUS 1601 **Elementary Russian II:** By the end of this continuation of Elementary Russian, students should be able to use basic vocabulary and grammar to read, to translate orally, and to write basic sentence patterns from Russian to English and English to Russian at the first-year level. They should also be able to converse in simple sentences. *Prerequisite: RUS 1600 or equivalent. (5-2) 6

Secretarial

SEC 3301 **Legal Terminology and Vocabulary:** Upon completion of this course, students will be able to demonstrate an extensive knowledge of legal terminology and vocabulary including definitions, usage, derivations and spelling. (3-0) 3

SEC 3302 **Effective Word Techniques:** Upon completion of this course, students will show proficiency in spelling, word usage, business terminology, and intelligent use of the dictionary. (3-0) 3

*SEC 3304 **Office Machines:** Upon completion of this course, students will be able to demonstrate the techniques, processes and operations of ten keyboard printing and display calculators and applications of the above to business type problems. *Prerequisite: FIN 3314. (2-2) 3

SEC 3305 **Editing, Proofreading, and Reference Skills:** Upon completion of this course, students will be able to use a variety of reference materials to answer specific questions regarding punctuation, grammar, capitalization; number usage, abbreviations, format, and document transmission as they relate to the preparation of business letters, memorandums, and reports. In addition, students will be able to proofread materials for accuracy. (3-0) 3

SEC 3311 **Receptionist Skills:** Upon completion of this course, students should be familiar with operation of key telephone devices used by a receptionist; be knowledgeable concerning effective public relations attitudes and skills that project a positive company image; be efficient in such job-related tasks as making appointments, recording messages, receiving and screening calls and callers, processing company mail, controlling petty cash accounts, and maintaining bulletin boards. (3-0) 3

SEC 3320 **Personal Projection:** Upon completion of this course, students will be able to recognize the importance of the physical, intellectual, social and emotional dimensions of personality. Emphasis will be placed on grooming and methods of personality improvements. (3-0) 3

SEC 3326 **Insurance Terminology and Vocabulary:** Upon completion of this course, students should be able to spell and define insurance terms; perform elementary research tasks in using insurance reference materials; explain the basic purpose and principles involved in insurance on selected categories; discuss current insurance issues and cases. (3-0) 3

SEC 3404 **Typing I:** Upon completion of this course, students should be able to type by touch, with emphasis on correct technique, mastery of the keyboard, simple business correspondence, and reports. Proficiency test may be taken for this course. (3-2) 4

*SEC 3405 **Typing II:** Upon completion of this course, students will demonstrate a further mastery of correct typewriting techniques to be applied in tabulations, manuscripts, correspondence and business forms. Individualized and self-instructional methods are employed. Speed requirement: 35 words per minute for 5 minutes. *Prerequisite: SEC 3404 or equivalent. (3-2) 4

*SEC 3406 **Typing III:** In this course, students will begin to function as expert typists producing mailable copies. The production units will involve tabulations, manuscripts, correspondence and business forms. Individualized and self-instructional methods are employed. Speed requirement: 45 words per minute for 5 minutes. *Prerequisite: SEC 3405 or equivalent. (3-2) 4

*SEC 3414 **Shorthand I:** Upon completion of this course, students will demonstrate a knowledge of Gregg shorthand theory. The emphasis will be on phonetics, penmanship, word families, brief forms and phrases. Proficiency test may be taken for this course. *Corequisites: COM 1304, SEC 3404 or equivalent or departmental consent. (3-2) 4

*SEC 3415 **Shorthand II:** Upon completion of this course, students will demonstrate a greater mastery of Gregg shorthand theory with greater emphasis on dictation and elementary transcription. They should also be able to take and transcribe at the typewriter new material at 60 words per minute for 3 minutes. Proficiency test may be taken for this course. *Prerequisite: SEC 3414; Corequisite: COM 3515, SEC 3405 and SEC 3305 or equivalent or departmental consent. (3-2) 4

*SEC 3416 **Shorthand III:** In this course, students will continue to review Gregg shorthand theory and to build speed. Emphasis will be on development of speed in dictation and accuracy in transcription. Upon completion of this course, students will be able to take and transcribe at the typewriter new material at 80 words per minute and mailable items at 70 words per minute. *Prerequisite: SEC 3415 or equivalent, COM 3515, SEC 3305; Corequisite: SEC 3406 or departmental consent. (3-2) 4

*SEC 3424 **Medical Transcription I:** In this course, students will be able to complete production units on the typewriter from dictation-transcription machines of medical correspondence and documents such as case histories, articles and hospital reports. *Prerequisite: SEC 3406. (2-4) 4

SEC 3426 **Insurance Office Skills:** Upon completion of this course, students should be able to: set up an efficient records and filing system for personal production; use effective telephone skills; dictate in a correct, organized manner; write a resume; represent themselves to advantage in a job interview. (2-2) 3

*SEC 4201 **Secretarial Cooperative Experience I:** In this course, students are actually placed in an office environment in the Charlotte business community. Upon completion of this course, they should be able to demonstrate the ability to commuicate effectively with others; accept responsibilities of promptness and personal neatness; learn company and department practices and procedures. In addition, they will be able to integrate their classroom training with on-the-job experience. *Prerequisite: departmental consent. (0-20) 2

*SEC 4202 **Secretarial Cooperative Experience II:** Students will continue to work in an office environment in the Charlotte business community. Upon completion of this course, they will be able to demonstrate competently the ability to communicate effectively with others, to accept responsibility for promptness and personal neatness, and to perform company and department practices and procedures. In addition, they will have integrated their classroom training with on-the-job experiences. *Prerequisite: SEC 4201. (0-20) 2

*SEC 4305 **Business Communications:** Upon completion of this course, students will have developed effective techniques for handling the special requirements of business letters and other forms of business communications. *Prerequisites: COM 1304, COM 3515, or departmental consent. (3-0) 3

*SEC 4326 **Insurance Office Problems:** Upon completion of this course, students should have practical skills typing and completing forms and documents used in life, accident and health offices, and fire and casualty offices. Students should also have skill in typing various letters used in those offices. *Prerequisite: SEC 3405. (2-2) 3

SEC 4370 **Records Management:** Upon completion of this course, students will know the fundamentals of indexing and filing. Theory and practice will be combined by the use of miniature letters, filing boxes and guides. Topics studied will include alphabetic name, geographic, subject and numerical filing. (3-0) 3

*SEC 4400 **Typing Skill Building:** Upon completion of this course, students will have improved accuracy and speed in typewriting, using an individualized, diagnostic, prescriptive approach. *Prerequisite: Students must know the typewriter keyboard. (3-2) 4

*SEC 4407 **Typing IV:** Upon completion of this course, students will be able to type a series of five projects in a mailable

format. In addition the course will review the fundamental principles of typewriting as they apply to production work with special emphasis on unarranged and uncorrected material. Speed requirement: 55 words a minute for 5 minutes. *Prerequisite: SEC 3406. (3-2) 4

*SEC 4409 **Legal Typing:** Upon completion of this course, students will be able to: type 55 words per minute for 5 minutes on straight-copy material with no more than 5 errors; produce problems of a mailable nature dealing with litigation, famiy law, negligence, business organizations, wills and estates, real estate, and bankruptcy; increase their legal vocabulary and knowledge of legal office procedures. *Prerequisite: SEC 3406. (3-2) 4

*SEC 4416 **Medical Typing:** Upon completion of this course, students should be able to: type 55 words per minute for 5 minutes on straight-copy material with no more than five errors; produce problems of a mailable nature typical of those required in a medical office; improve their medical vocabulary and knowledge of medical office procedures; complete a variety of medical insurance claims. *Prerequisite: SEC 3406. (3-2) 4

*SEC 4417 **Shorthand IV:** Upon completion of this course, students should be able to take and transcribe at the typewriter dictation at 90 words a minute for 3 minutes on new material, and transcribe at the typewriter. Also, students should be able to transcribe for mailability documents appropriate to a business office. *Prerequisite: SEC 3416 or equivalent. (3-2) 4

*SEC 4425 **Machine Transcription:** Upon completion of this course, students will be able to operate a transcribing machine and will have transcribed various kinds of communications at the typewriter into mailable form. Emphasis will be placed on grammar and proofreading. *Prerequisite: COM 3515; Corequisite: SEC 3406 and SEC 4426 or departmental consent. (3-2) 4

*SEC 4426 **Word Processing I:** Upon completing this course, students will demonstrate an understanding of the concepts of word processing and will be able to operate a word processor. *Prerequisite: SEC 3405. (3-2) 4

*SEC 4427 **Word Processing II:** Upon completion of this course, students will be able to perform advanced applications on a microcomputer while practicing and testing their language skills in the context of word/information processing problems. *Prerequisite: SEC 4426 (3-2) 4

*SEC 4448 **Legal Shorthand:** In this course, students will be able to demonstrate the ability to take in shorthand and then transcribe rapidly and accurately legal documents, instruments and correspondence. Shorthand shortcuts for the legal vocabulary will be presented, and law office procedures will be emphasized. Upon completion of this course, students should be able to take and transcribe at the typewriter dictation at a minimum rate of 90 words a minute for 3 minutes and mailable items at a minimum rate of 80 words a minute. *Prerequisite: SEC 3416, SEC 3301. (3-2) 4

*SEC 4517 **General Office Procedures:** Upon completing this course, students will be able to demonstrate how to handle secretarial responsibilities such as receiving office visitors, handling the mail, telephone, planning travel, preparing financial records, purchasing supplies, organizing the desk and office, using reprographic services. They will also be able to prepare a resume, an application letter, an application form, and a follow-up letter. *Prerequisite: SEC 3406 or departmental consent. (5-0) 5

Security, Industrial Safety, and Health Management Technology

SSH 3301 **Principles of Industrial Management:** Upon completion of this course, students should be able to: identify the line and staff concept and the role each function must play in a successful management team; demonstrate an understanding of the various functions in the managerial process as it relates to decision making and policy formulation, organizing and staffing, planning and controlling, communicating and directing; demonstrate knowledge of group decision-making process specifically relating to the various types of committee organizations and the group and interpersonal dynamics which exist therein; demonstrate knowledge of the development of psychological principles as they have been applied to the industrial setting. (3-0) 3

SSH 3302 **Hotel and Motel Security:** Upon completion of this course, students should be able to: demonstrate an understanding of the hotel/motel security function; have a working knowledge of federal and state laws and local ordinances regarding the operation of hotels/motels; analyze security hazards and outline protective measures such as: security organizations, threat evaluation, access control, protection of cash, emergency planning, fire prevention and safety standards—(OSHA); prepare a working plan for a hotel/motel to include areas indicated above. (3-0) 3

SSH 3304 **Access Control and Loss Prevention:** Upon completion of this course, students should be able to: determine strengths and limitations of security alarm systems; understand the functional operations of common access control systems; understand the fundamental operations of theft and risk control; translate principles of loss prevention management into workable security procedures. (3-0) 3

SSH 3500 **Introduction to Loss Prevention:** Upon completion of this course, students should be able to: understand the historical, philosophical and legal bases of security; understand the fundamental principles of loss prevention and their role in modern society; translate principles of loss prevention management into workable security procedures; conduct a loss prevention survey of a facility incorporating personnel, information and physical security criteria. (5-0) 5

SSH 3501 **Introduction to Principles of Safety:** Upon completion of this course, students should be able to: identify principles of safety regarding equipment and machines; demonstrate skills in placement and use of protection equipment; demonstrate knowledge of safety principles in designing safety controls; demonstrate knowledge of methodology required to design, install and follow up a safety program. (4-2) 5

SSH 3503 **Retail Security:** Upon completion of this course, students should be able to: recognize problems and practices associated with retail security; prepare security proposals associated for a retail facility with regard to security measures; understand the proper utilization of "honesty shoppers," undercover detectives and employee morale building programs. (5-0) 5

SSH 3504 **Occupational Safety and Health I:** Upon completion of this course, students should be able to: be familiar with principles of on-the-job and off-the-job safety programming; be familiar with inter-relationship of safety, security and fire sys-

tems, and programs; demonstrate knowledge of use of basic Job Safety and System Safety Analysis techniques; demonstrate knowledge of workplace health hazards and initial symptoms of those hazards; be familiar with engineering controls, their value and limitations. (4-2) 5

*SSH 3505 **Occupational Safety and Health II**: Upon completion of this course, students should be able to: review plans and specifications for adequacy of safety, fire and security provisions; design safety systems for the control of explosive atmospheres in vapors, dusts and gases; design safety equipment and guards for semi-complex systems; conduct complex employee health monitoring testing; demonstrate familiarity with approved testing and monitoring equipment, its use and calibration. *Prerequisite: SSH 3504. (4-2) 5

SSH 4304 **Special Problems in Industrial Safety**: Upon completion of this course, students should be able to: adapt modern methodological research techniques to a current problem in industrial safety through independent study; make clear written presentation in appropriate format; apply appropriate statistical analyses to the problem(s) of interest; develop familiarity with available source data; identify a viable project and carry the assigned task through to a logical conclusion. (2-2) 3

SSH 4501 **Industrial Hygiene and Toxicology**: Upon completion of this course, students should be able to: complete comprehensive reviews and make meaningful recommendations regarding methods of assessment, control or elimination of potential industrial hygiene or toxicology problems; demonstrate familiarity with all carcinogen, mutagen and teratogen forming materials, their threshold limit values (TVL's) and lethal dose 50 (LD-50) values; demonstrate knowledge of principles of ventilation, hazard control and the methods required to cope successfully with known and suspected hazards in the workplace. (4-2) 5

SSH 4504 **Security Problems and Practices I**: Upon completion of this course, students should be able to: analyze and understand special problems and practices of the security profession; prepare and conduct a security survey of an open office, office building, school campus and airport; identify problem areas and recommend procedures for safeguarding computer facilities; prepare and implement procedures for security of transportation and cargo facilities. (4-2) 5

SSH 4510 **Principles of Interviewing and Interrogation**: Upon completion of this course, students should be able to: interview victims, witnesses, informants and complainants as a communicative relationship; use professionally acceptable techniques, question suspects and persons in custody; apply information obtained through the interview process for court testimony when required. (5-0) 5

SSH 4511 **Nuclear Safety**: Upon completion of this course, students should be able to: define the procedures for maintaining radiation safety; understand the effects of radiation exposure on health; define current methods for radiation exposure control; define the methods used to sample radiation in the environment; prepare a nuclear emergency safety plan. (5-0) 5

SSH 4512 **Nuclear Security**: Upon completion of this course, students should be able to: define the special requirement for nuclear security; understand the threat to nuclear facilities; design a method for controlling personnel access to controlled areas; prepare a plan for escorting nuclear materials; understand the planning necessary for possible nuclear disasters; design an evacuation plan for a possible nuclear disaster. (5-0) 5

SSH 4513 **Computer Security**: Upon completion of this course, students should be able to: define the current threat to computer security; define at least 10 methods of maintaining physical security; define procedures for organizing electronic data-processing security; define at least 10 methods of maintaining communications security; define at least 10 systems of personal identification; construct a plan for evaluating a threat as to computation of loss and cost of countermeasures to neutralize the threat. (5-0) 5

SSH 4514 **Electronics for Security**: Upon completion of this course, students should be able to: describe the current state of the art in basic electronic security devices; describe the state of the art in audio intelligence gathering devices used for industrial espionage; describe the most effective countermeasures to protect industrial audio; prepare a plan for installation of electronic security devices; prepare a plan to protect the audio in an industrial setting; know the current state and federal laws governing electronic surveillance and countermeasure devices and procedures. (5-0) 5

SSH 4515 **Executive Protection and Terrorism**: Upon completion of this course, students should be able to: define the history of terrorism; be familiar with the infra-structure of current terrorist organizations, including their objectives, philosophy and techniques; define the current practices of executive protection and, in a given situation, construct a plan for executive protection. (5-0) 5

SSH 4520 **Industrial Investigations**: Upon completion of this course, students should be able to plan and conduct background investigations of prospective employees; plan and conduct internal investigations; use outside resources for obtaining information; provide investigations for federal program compliances; maintain confidentiality of investigative information. (5-0) 5

Small Engine Repair

PME 5211 **Small Engine Repair I**: Upon completion of this course, students should be able to: describe the basic operation of two-stroke and four-stroke-cycle air-cooled engines; describe and service at least two types of magneto ignition systems and carburetion systems; perform de-carboning service on heads of air-cooled engine. (1-3) 2

*PME 5214 **Small Engine Overhaul**: Upon completion of this course, students should be able to: describe and perform the service on most small air-cooled two or four-stroke-cycle engines. This service will include: disassembly and reassembly; measuring components for wear; servicing valves; resizing cylinders; replacing bearings and bushings. *Prerequisite: PME 5211. (1-3) 2

Sociology

SOC 1301 **Group Interaction**: A course designed to enhance students' understanding of group process and dynamics. Upon completion, they should demonstrate a knowledge of the skills essential for analysis of forces at work in groups and for working effectively in a group context. (3-0) 3

SOC 1500 **Sociology of the Family**: A course designed to help students develop an understanding of contemporary American family patterns when examined from a cross-cultural perspective. Upon completion of this course, students should demonstrate a knowledge of the family as a social institution and the social forces which have influenced its development. (5-0) 5

SOC 2514 Introduction to Sociology: An introductory course which may be taken in either a self-paced or conventional manner. Upon completion, students should demonstrate a knowledge of the basic concepts of sociology, their application to contemporary group life, and the skills essential for objective analysis of one's social and cultural heritage. (5-0) 5

SOC 2515 Social Problems: A course which may be taken in either a self-paced or conventional manner. Upon completion, students should demonstrate an understanding of some of the major social problems confronting contemporary American society, as well as the theories which account for the underlying conditions and human behaviors which result from these conditions. Proposals for reform will be examined. (5-0) 5

***SOC 2524 Special Problems of Sociology:** A course for advanced students who have been approved by the department head. Students will consult with a departmental instructor and select a sociological topic of study. The study may involve library research as well as actual observation and the collection of data. Where several students have selected the same or similar topics concerned with a timely or important sociological subject, a seminar or class may be arranged. *Prerequisite: Consent of department head and instructor. (5-0) 5

Spanish

SPA 1300 Survival Spanish I: This course provides an oral approach to comprehending and communicating in Spanish. Upon completion of this course, students should be able to use basic communication in terminals, shops, restaurants, hotels and other places. Videotapes and extensive conversation in the classroom reinforce instruction. *(Elective credit only. Does not satisfy humanities requirement.)* (3-0) 3

SPA 1314 Survival Spanish II: Upon completion of this course, students should develop further the listening, speaking, reading and writing skills attained during the first course of Survival Spanish. Students should be able to master apt phrases for use in health services, travel services and school/campus situations. (3-0) 3

SPA 1600 Elementary Spanish I: Upon completion of this course, students will have a knowledge of some basic elements of Spanish in conversation, reading and writing. Filmstrips and tapes are used in classroom and laboratory instruction. *(Does not satisfy humanities requirement.)* (5-2) 6

***SPA 1601 Elementary Spanish II:** Continuation of SPA 1600 in basic elements of conversation, reading and writing. Tapes, filmstrips, movies and extensive conversation in the classroom. *Prerequisite: SPA 1600 within previous two quarters or departmental consent. *(Does not satisfy humanities requirement.)* (5-2) 6

***SPA 2320 Special Topics:** An advanced course in which students and the instructor select topics for independent study. The class meets for oral reports and discussion. *Prerequisite: SPA 2600 within two previous quarters or consent of department head. (3-0) 3

***SPA 2600 Intermediate Spanish I:** Upon completion of this course, students will have had an intensive review of basic grammar and vocabulary combined with study of idiomatic forms and grammatical structures in selected readings. *Prerequisite: SPA 1601 or two high school units within previous two quarters or departmental consent. (5-2) 6

***SPA 2601 Intermediate Spanish II:** Upon completion of this course, students will have completed a review of grammar along with readings in Spanish with emphasis on people and events. *Prerequisite: SPA 2600 within previous two quarters or departmental consent. *(SPA 2600 and SPA 2601 combined will satisfy humanities requirement.)* (5-2) 6

Speech

SPH 1300 Oral Communications: Upon completion of this course, students should be able to demonstrate basic communication skills when speaking before an audience, using the fundamental techniques of preparation, organization and delivery. They will also participate in group discussions and demonstrate appropriate listening behavior. (3-0) 3

SPH 1301 Persuasive Speaking: Upon completion of this course, students should be able to show through the use of analysis, evidence and reasoning patterns that attitudes, actions and beliefs may be altered. Persuasive methods of evaluative and actuative claims will be emphasized. (3-0) 3

SPH 2101 Parliamentary Procedure: Upon completion of this course, students should be able to participate in business, professional, labor, service and fraternal organizations that use the rules of parliamentary procedure. (1-0) 1

SPH 2300 Voice and Diction: Upon completion of this course, students should be able to approximate the sounds of standard American English, identify them in simple words and employ the sounds through individual readings. They should be able to demonstrate proper pronunciation, breath control, phrasing, pitch inflection and vocal variation for effective speech. (3-0) 3

SPH 2304 Public Speaking: Upon completion of this course, students should be able to prepare and deliver the following speeches: informative, entertaining and persuasive. In addition, they should be able to introduce a speaker, present and accept awards and deliver impromptu speeches. (3-0) 3

Transportation

TRN 3300 Introduction to Transportation: An introduction course which surveys the entire field of transportation, transportation management and the career opportunities available in the field. Upon completion of the course, students should be able to: trace the development of the transportation system as it exists in the United States; compare the various modes of transportation; explain the career opportunities in each area of specialization including traffic management, sales and operations; describe briefly how rates are established; explain how highways are financed; describe briefly the regulatory aspects of the industry including recent deregulation; discuss different types of claims, and describe the operational aspects and management of companies involved in transportation. (3-0) 3

TRN 3303 Economic Theory and Regulatory History of Transportation: Upon successful completion of this course, students should be able to trace the historical developments that led to economic regulation of transportation; describe the functions and impact of the government's role in regulation; distinguish between interstate and intrastate commerce; explain the economic advantages and diadvantages of each mode of transportation; apply basic economic theory to transport pricing; discuss the evolution of the national transportation policy; identify problems in local urban transportation and formulate possible solutions. (3-0) 3

TRN 3320 Motor Fleet Supervision I: This course is Part I of a two-part series designed for the individual who is responsible for fleet safety and security within the trucking industry. Part I will emphasize hiring, training, supervision and/or evaluating employees in the trucking industry. Upon completion of Part I, students will be able to: identify and describe the essential elements of a fleet safety program as prescribed by the American Trucking Association (ATA); apply DOT requirements in employee selection procedure; apply DOT recommended procedures for training; demonstrate proper techniques in driver supervision as prescribed by the ATA; utilize DOT methods for physical safety and security of cargo. (3-0) 3

TRN 3321 Motor Fleet Supervision II: This course is Part II of a two-part series designed for the individual who is responsible for fleet safety and security within the trucking industry. Part II will emphasize accident prevention incentive awards, hours of service, communications and OSHA. Upon completion of this course, students should be able to: identify causes and prevention of accidents; apply proper procedures in the notification, reporting and recording of accidents as required by DOT regulations; establish and conduct incentive award programs; complete and supervise completion of DOT required documents of travel; apply effective communication techniques; interpret and apply applicable OSHA regulations; design (in writing) a fleet safety supervision program including all essential elements as prescribed by the ATA. (3-0) 3

TRN 3350 Highway Transportation: A course which examines the motor carrier industry. Upon successful completion of the course, students should be able to: identify and discuss classifications of motor carrier users, types of carriers, state and federal regulations and regulatory agencies; facilities and types of equipment. (3-0) 3

TRN 3351 Traffic Management: Upon completion of this course, students should be able to: compare for-hire carriers and company-operated transportation as to services and costs; analyze and interpret freight tariff; explain freight classification and rate structure; identify various routing procedures; define in-transit arrangements, reconsignments and diversions; apply procedures to avoid demurrage; describe documentation, and movement of export and import traffic; identify areas of carrier liability and methods of processing freight claims. (3-0) 3

TRN 3360 Transportation Rates: A problems approach to the study of motor carrier rates and charges. Emphasis is placed on tariffs published by the Southern Motor Carrier Rate Conference. Upon completion of this course, students should be able to: discuss the classification, construction and application of rates and charges; compute simple rate problems; apply various Southern Motor Carrier Rate Conference Tariffs to practice problems. (3-0) 3

TRN 4200 Cooperative Education I: Upon successful completion of this course, students should be able to: evaluate their own interest in traffic and transportation as a career; identify job opportunities; complete a resume and employment application; participate in an employment interview; obtain employment to assess general requirements for successful employment in traffic and transportation; evaluate their own capacity to comply with such demands. (0-20) 2

TRS 4300 Transportation Costing: Upon successful completion of this course, students should be able to demonstrate a basic knowledge of various transportation cost elements; describe and explain costing problems in transportation and distribution; analyze cost aspects of logistics; conduct capital project evaluation and analysis; and explain international distribution cost; service characteristics; develop and implement automated systems for cost reduction. (3-0) 3

TRN 4351 Freight Claims: Upon completion of this course, students should be able to: investigate damaged shipments; gather and present facts to determine carrier liability; file and process a claim for payment; describe actions shipper and carrier can take to prevent damage from loss, damage or delay. (3-0) 3

TRN 4356 Physical Distribution Management: Upon completion of this course, students should be able to: describe the movement and storage of finished goods from the end of the production line to the ultimate consumer; identify the various segments involved in physical distribution; compare the advantages and disadvantages of each segment in order to make more cost-effective decisions. (3-0) 3

TRN 4370 Transportation Seminar: An individualized course designed for advanced transportation management students to expand knowledge of principles and techniques acquired in prerequisite courses and to relate that knowledge to practical situations through the techniques of simulations, case studies and specialized industry projects, and tailored to each student's career objective. Upon completion of this course, students should be able to apply the skills and practices necessary for the successful performance in the chosen career area of transportation. (1-4) 3

TRN 4358 Warehousing: A course which examines warehousing from two perspectives—the user of public or private warehousing and the warehouse operator who handles them. Upon completion of this course, students should be able to: describe the types of warehousing, public and private; user considerations; list and explain various management methods and concepts for the operator of a warehouse facility; recognize and describe the different types of equipment used in material handling. (3-0) 3

TRN 4360 Motor Carrier Management: Upon completion of this course, students should be able to: plan a small trucking fleet to insure proper equipment selection; conduct cost analysis on buying or leasing equipment; select the proper insurance and licenses for operation; apply proper budgeting techniques to develop cost per mile figures to insure a cost-effective operation. (3-0) 3

TRN 4375 Import Transportation Management: Upon successful completion of this course, students should be able to: demonstrate a thorough understanding of import terminology; explain the process of importing and the associated support organizations including legal and regulatory controls; apply practical knowledge in organizing and staffing an import department; identify the responsibilities and services of overseas consolidation; process import documentation including the responsibilities of the clearing agent and U.S. Customs; select and utilize the proper carrier of import transportation; locate sources of information and special services; identify and analyze trends and their impact on international transportation. (3-0) 3

TRN 4380 Export Transportation Management: Upon successful completion of this course, students should be able to: demonstrate a thorough understanding of export terminology; explain the participants in exporting and associated supporting organizations; apply practical knowledge in organizing and staffing an export department; identify the responsibilities and services of international freight forwarders, including legal and

regulatory controls; write and process an export order including transport by all modes of transportation, insurance coverage and terms of payment, describe the use of freight consolidation and overseas distribution; identify and analyze trends and their impact on international transportation; locate sources of information and special services. (3-0) 3

Welding

WLD 5203 Blueprint Reading for Welders I: Upon completion of this course, students should be able to: sketch multiview drawings; interpret conventional lines, dimensions, notes and welding symbols; make pictorial sketches; interpret industrial drawings used in welding shops. (1-2) 2

***WLD 5204 Blueprint Reading for Welders II:** Upon completion of this course, students should be able to: read and interpret industrial welding prints of a more complex nature; make sketches of welding assemblies; interpret detail welding symbols. *Prerequisite: WLD 5203. (1-2) 3

WLD 5210 Basic Oxyacetylene Welding: Upon completion of this course, students should be able to: identify; set up, calibrate and operate the oxyacetylene welding equipment; demonstrate surface welding, bronze welding and flame cutting methods applicable to mechanical repair work; identify and demonstrate safety precautions pertaining to oxyacetylene welding and cutting. (1-3) 2

WLD 5220 Basic Electric Arc Welding: Upon completion of this course, students should be able to: identify the essentials of shielded metal arc welding; operate a rectifier type welding machine; weld the more common types of joints applicable to mechanical repair work in the flat position; identify and demonstrate safety precautions pertaining to shielded metal arc welding. (1-3) 2

***WLD 5240 Introductory Pipe Welding:** Upon completion of this course, students should be able to: discuss pipe welding procedures, pipe and tubing measurements; discuss proper procedures for surface preparation, fitting, positioning, gap clearance and tacking of pipe; demonstrate proficiency in oxyacetylene flame cutting of pipe and test specimens for guided band test and document results; weld pipe using shielded metal arc welding process with E-6010 and E-7018 electrodes in the rolled position; demonstrate and practice safety precautions pertaining to shielded metal arc welding. *Prerequisite: WLD 5280, Welding Program director's approval. (1-3) 2

WLD 5250 Basic Gas Metal Arc Welding: Upon completion of this course, students should be able to: identify, calibrate and operate the gas-metal arc welding equipment; weld different types of joints in the flat position applicable to mechanical repair work; select welding heats and shielding gases; identify and demonstrate safety precautions pertaining to gas-metal arc welding. (1-3) 2

***WLD 5267 Certification Practice:** Upon completion of this course, students should be able to: weld various metals to meet CPCC certification standards using oxyacetylene, electric arc, gas tungsten arc, and gas-metal arc welding processes; demonstrate safety precautions involved in using welding and other shop equipment and tools. *Prerequisite: WLD 5450, WLD 5610, WLD 5820, WLD 5830; Corequisite: WLD 5268. (0-6) 2

***WLD 5268 Certification Testing:** Upon completion of this course, students should be able to: discuss and perform various tests including guided bend, liquid penetrant, magnetic particle, and tensile tests to detect imperfections and discontinuities in weldments; demonstrate skill in producing quality welds. *Prerequisite: WLD 5610, WLD 5820, WLD 5830; Corequisite: WLD 5267. (2-0) 2

WLD 5311 Oxyacetylene Welding and Cutting I: Upon completion of this course, students should be able to: describe the principles of oxyacetylene welding and cutting; describe the operation of the equipment; assemble all components properly; form a puddle and carry the puddle forming weld beads in the flat position on different types of joints; identify and demonstrate all safety precautions involved in oxyacetylene welding. (2-3) 3

***WLD 5312 Oxyacetylene Welding and Cutting II:** A continuation of WLD 5311. Upon completion of this course, students should be able to: demonstrate proficiency of welding in all positions on different types of joints; cut ferrous metals; perform brazing operations; visually inspect all welds to determine quality; identify and practice all safety precautions involved in oxyacetylene welding and cutting. *Prerequisite: WLD 5311. (1-6) 3

***WLD 5355 Commercial and Industrial Practices I:** Upon completion of this course, students should be able to: demonstrate skill developed through practice in simulated industrial processes and techniques; sketch, lay out, list procedures and construct a project following these procedures; repair worn or broken parts by special welding application; perform nondestructive tests and inspection; identify and practice safety precautions involved in the welding industry. *Prerequisite: WLD 5610, WLD 5820, WLD 5830, WLD 5450. (1-6) 3

***WLD 5356 Commercial and Industrial Practices II:** A continuation of WLD 5355. Upon completion of this course, students should be able to: prepare a bill of materials necessary to fabricate projects; fabricate projects from a sketch or blueprint; demonstrate additional skill in those areas outlined in WLD 5355. *Prerequisite: WLD 5355. (1-6) 3

WLD 5401 Basic Calculations for Welders: Upon completion of this course, students should be able to: apply the principles of addition. subtraction, multiplication and division to problems related to the welding field; apply the functions of ratio and proportion to length and height of dimensions; read a ruler satisfactorily; calculate the percentage of error involved in a given measurement; manipulate fractional and decimal numbers; find weights and capacities of stock using area and volume formulas; understand angular measurement. (4-0) 4

***WLD 5404 Pipe Welding:** Upon completion of this course, students should be able to: discuss proper procedures for fitting, positioning, determining gap clearance, tacking and surface preparation of pipe; demonstrate proficiency in oxyacetylene flame cutting of pipe and test specimens to be used; weld pipe using the shielded metal arc welding process with E-6010 and E-7018 electrodes in the horizontal and vertical fixed positions; demonstrate and practice safety precautions pertaining to shielded metal arc welding equipment. *Prerequisite: WLD 5240, WLD 5820. (2-6) 4

WLD 5421 Arc Welding I: Upon completion of this course, students should be able to: identify the proper set-up and operation of an AC transformer, rectifier and DC motor generator arc welding machine; identify and select welding electrodes, polarities and heats used in joining various metal alloys; prepare and demonstrate welding proficiency on different types of joints in the flat and horizontal position; test welds to detect weak-

nesses and imperfections; demonstrate and practice safety precautions pertaining to shielded metal arc welding. (2-6) 4

*WLD 5422 Arc Welding II: A continuation of WLD 5421. Upon completion of this course, students should be able to: demonstrate welding proficiency on different types of joints in all positions; make intermittent welds and multiple passes; test welds to detect weaknesses and imperfections; demonstrate and practice safety precautions pertaining to shielded metal arc welding. *Prerequisite: WLD 5421. (2-6) 4

WLD 5431 Gas Tungsten Arc Welding I: Upon completion of this course, students should be able to: define operations and uses of gas tungsten arc welding equipment; identify and select welding electrodes, shielding gases, filler rods and heat ranges; demonstrate welding proficiency on different types of joints and various metal alloys, including aluminum and stainless steel, in the flat position; test welds to detect weaknesses and imperfections; demonstrate and practice safety precautions pertaining to gas tungsten arc welding. (2-6) 4

*WLD 5432 Gas Tungsten Arc Welding II: A continuation of WLD 5431. Upon completion of this course, students should be able to: describe and demonstrate the proper set-up and operational procedures of gas-metal arc welding equipment; demonstrate welding proficiency on different types of joints of various metal alloys, including aluminum and stainless steel in all positions; identify and select electrodes, gases, cutting heat ranges and operation of the plasma arc cutting system on non-ferrous metals; demonstrate and practice safety precautions pertaining to gas-tungsten arc welding and plasma cutting. *Prerequisite: WLD 5431. (2-6) 4

WLD 5450 Gas Metal Arc Welding: Upon completion of this course, students should be able to: describe the essentials of gas metal arc welding; set up according to procedure and operate the gas metal arc welding equipment; weld different types of joints in the flat, vertical and horizontal positions on steel sheet metal plate and aluminum plate; select welding current, shielding gases and filler wires; identify and practice safety precautions pertaining to gas metal arc welding. (2-6) 4

WLD 5610 Oxyacetylene Welding and Cutting: Upon completion of this course, students should be able to: describe and demonstrate a knowledge of the principles of oxyacetylene welding and cutting; describe the operation and set-up of the equipment; assemble all components properly; select filler materials, proper welding tip and flame; form a puddle and carry the puddle forming weld beads in required positions on different types of joints; cut ferrous metals; perform brazing operations; demonstrate proficiency in welding, brazing and cutting; visually inspect all welds to determine quality; identify, demonstrate and practice all safety precautions involved in oxyacetylene welding and cutting. (3-9) 6

*WLD 5654 Commercial and Industrial Practices: Upon completion of this course, students should be able to: demonstrate skills developed through practice in simulated industrial processes and techniques; sketch, lay out, list procedures and construct a product following these procedures; repair worn or broken parts by special welding applications; perform non-destructive tests and inspections; prepare bill of materials necessary to fabricate projects; identify and practice safety precautions involved in the welding industry. *Prerequisite: WLD 5450, WLD 5610, WLD 5820, WLD 5830. (2-12) 6

WLD 5820 Arc Welding: Upon completion of this course, students should be able to: identify the proper set-up and operation of an AC transformer, rectifier, and DC motor generator arc welding machine; identify and select welding electrodes, polarities and heats used in joining various metal alloys; prepare and demonstrate welding proficiency on different types of joints in all positions; test welds to detect weaknesses and imperfections; demonstrate and practice safety precautions pertaining to shielded metal arc welding. (4-12) 8

WLD 5830 Gas Tungsten Arc Welding: Upon completion of this course, students should be able to: define the operation and uses of gas tungsten welding equipment; identify and select welding electrodes, filler rods and heat ranges; demonstrate welding proficiency on different types of joints of various metal alloys, including aluminum and stainless steel, in all positions; test welds to detect weaknesses and imperfections; identify and select electrodes, gases, cutting heat ranges and operations of the plasma arc cutting system on non-ferrous metals; demonstrate and practice safety precautions pertaining to gas tungsten arc welding and plasma cutting. (4-12) 8

FACULTY & PROFESSIONAL STAFF

Faculty and Professional Staff

ADAMS, FREDERICK P., Manager, Bookstore
B.A., 1971 (Campbell College).

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ATES, WILNA ELAINE, Computer Science
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BALLARD, CARL N., Accounting
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BELL, AUGUSTA, Writing and Humanities
B.J., 1946 (University of Texas); M.A., 1957 (Northwestern University).

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BENJAMIN, BRENDA L., Computer Center
Study at State University of New York and New York City College

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BODRICK, LEONARD E., Counselor, Talent Search
B.A., 1976 (Johnson C. Smith University); M.P.I.A., 1979 (University of Pittsburgh). Additional graduate study at University of North Carolina at Chapel Hill.

BOST, TED ROBY, JR., Automotive Mechanics
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BUCHANAN, WILLIAM S., Coordinator, College Security and Safety
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BURNETT, ANN, Director, Registration
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CAHILL, JAMES D., Business Administration
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CAMPBELL, H. EDWIN, Director, Occupational Education
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CANNON, ALICE F., Computer-Based Information/Registration Coordinator
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CARNES, ROSEMARY J., Computer Center
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CHEEK, KAROL C., Biology
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B.A., 1963 (Bob Jones University); M.A., 1969 (East Tennessee State University). Additional graduate study at University of Colorado and Dominican College at San Rafael.

HOOD, WILMA H., Associate Degree Nursing
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HORTON, MURIEL G., Associate Degree Nursing
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HOUSTON, JAMES H. III, Manager, Taylor Hall
B.S., 1957 (Johnson C. Smith University). Additional study at University of North Carolina at Charlotte and Springfield College.

HOWARD, CORA C., Mathematics
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HOWELL EDWARD N., Director, College Roads and Grounds
B.S., 1976 (North Carolina State University). Additional study at Appalachian State University.

HOWELL, JERRY, Graphic Arts
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HUDSON, JUDY THREATTE, Speech
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HUNEYCUTT, JUDY, Special Services
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IBANEZ, HUGO J., Writing and Humanities
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A.B., 1946 (Duke University).
JONES, CATHY, Counseling Services
B.A., (Barber-Scotia College); M.Ed., (University of North Carolina at Charlotte).
JONES, DEBRA W., Computer Center
B.S., 1977 (North Carolina Central University).
JONES, JAMES B., JR., Mathematics
B.A., 1963 (Lenoir-Rhyne College); M.A., 1965 (University of South Carolina). Additional graduate study at University of Alabama, Birmingham.
JONES, JUDITH SHELTON, Data Entry Instructor
Diploma, 1969 (Bessemer State Technical College, Bessemer, Alabama). Additional undergraduate study at University of Alabama, Birmingham.
JONES, LONELL, Division Head, Nursing Programs
Diploma, 1957 (Hendrick Memorial Hospital School of Nursing; B.S.N., 1962 (Texas Christian University); M.S.N., 1966 (Washington University).
JOYNER, NORMAN, Electrical and Electronics Engineering Technology
Specialty Schools, U.S. Army Electronics School, RCA and Westinghouse. Fifteen years electrical work experience.
KASLER, BARBARA JOHNSON, Art, Fine Arts
B.A., 1958 (Queens College); M.Ed., 1968 (Wayne State University).
KELLER, PAUL L., Matthews Area Coordinator
B.A., 1965 (Boston University); M.B.A., 1971 (University of Massachusetts, Amherst); A.A.S., 1978 and 1979 (Central Piedmont Community College).
KENNEDY, GEORGE MANUEL, Art, Commercial Art
B.A., 1967 (University of North Carolina at Charlotte). Additional study at University of North Carolina at Charlotte.
KIBLER, WILLIAM ARTHUR, JR., Adult Education
B.S., 1960 (North Carolina Agricultural and Technical State University). Additional study at Johnson C. Smith University.
KING, SARA ANNE, Paralegal Program
B.A., 1968 (Pfeiffer College); J.D., 1972 (Stetson University).
KIRKMAN, A. VICTOR, JR., Activity Coordinator, Computer-Based Information/Registration and Support Services
B.A., 1955 (Wake Forest University); M.A., 1964 (Appalachian State University); Ed.D., 1976 (Nova University).
KISER, HELEN T., Practical Nursing
Diploma, 1953 (Mercy School of Nursing); B.A., 1973 (Limestone College); M.Ed., 1982 (University of North Carolina at Charlotte). Registered Nurse.
KOONTS, G. DAN, Mechanical/Manufacturing Technology
A.A.S., 1971 (Davidson County Community College); B.E.T., 1976 (University of North Carolina at Charlotte). Additional study at Central Piedmont Community College, North Carolina State University and University of South Carolina.
KRIEGER, MARVIN, Economics
B.A., 1968 (Lenoir-Rhyne College); M.A., 1969 (Wake Forest University). Additional study at Duke University, University of North Carolina at Charlotte and Wake Forest University. 1981-82, Visiting Fellow, St. Anthony's College, Oxford University. Graduate studies at Institute of Economics and Statistics, doctoral studies at Oxford Centre for Management Studies, Oxford University.
LAKE, BARBARA SUE, Advancement Studies
A.A., 1968 (Central Piedmont Community College); B.A., 1971 (University of North Carolina at Charlotte); M.H.D.L., 1981 (University of North Carolina at Charlotte); A.G.E., 1982 (Central Piedmont Community College). Additional graduate study at North Texas State University and North Carolina State University.
LAMAL, PAULINE DOVE, Arts, Fine Arts
B.A., 1965 (Mary Baldwin College); M.F.A., 1969 (George Washington University).
LANIER, CONNIE C., Behavioral and Social Science
A.B., 1960; M.A., 1962 (Emory University); Ed.D., 1981 (Nova University). Licensed Psychological Examiner.
LAUNT, JONATHAN T., Writing and Humanities
B.A., 1967; M.A.T., 1969 (University of North Carolina at Chapel Hill).
LAWHORNE, LAURA, Computer Lab
A.A.S., 1980 (Central Piedmont Community College).
LAWING, MARGARET SHARPE, Speech
B.A., 1957 (Elon College); M.A., 1968 (University of North Carolina at Greensboro). Additional graduate study at University of Northern Colorado and Western Carolina University.
LEE, LILLIE M., Media Services
LEININGER, JOHN M., Graphic Arts
B.S., 1978 (State University of New York at Oswego); M.Ed., 1981 (Clemson University).
LESSLIE, JAMES WYLIE, Architectural Technology
Bachelor Architecture, 1960 (Clemson University).
LEWIS, LILLIAN R., Dicer Accounting Specialist, Business Office
B.A., 1964 (Johnson C. Smith University).
LEWIS, THEODORE H., Computer Science
Study at Western Carolina University.
LOCKE, STANLEY E., Director, Media Services
B.A., 1978 (Johnson C. Smith University). Additional study at Appalachian State University and University of North Carolina at Charlotte.
LOCKEE, OTTO A., Vice President, Corporate Services
B.S., 1950; M.Ed., 1951 (Texas Christian University); Ed.D., 1979 (Nova University). Registered Professional Engineer.
LOCKLER, RAY W., Environmental Systems Program
A.A., 1975 (Central Piedmont Community College).
LOTTES, SUSAN M., Associate Degree Nursing
B.S.N., 1968 (Indiana University).
LUCKADOO, SHIRLEY R., Secretarial Science
A.A., 1963 (Gardner-Webb College); B.A., 1965 (Furman University); M.A.T., 1971 (Winthrop College); Ed.D., 1980 (North Carolina State University).
LUCKADOO, VAUGHN C., Program Director, Casework and Outreach
B.A., 1968 (Wake Forest University); M.Ed., 1972 (University of North Carolina). Additional graduate study at University of North Carolina. N.C.C. (National Certification in Counseling). Registered Practicing Counselor, State of North Carolina.
McALEXANDER, GLENDA K., Dental Hygiene
A.A., A.S. (Central Piedmont Community College); B.A., 1984 (University of North Carolina at Chapel Hill).
McALEXANDER, J. AARON, Physical Science
B.A., 1961 (Appalachian State University); M.A.T., 1965 (University of North Carolina at Chapel Hill); Ed.D., 1976 (Nova University).
McBRIDE, WALTER J., Electronics/Computer Technology
A.A.S, 1952 and 1953 (California Institute of Technology); A.A., 1967 (West Valley College).

McCAW, R. LEWIS, Program Director, Curriculum Improvement Project (Automotive), North Carolina Department of Community Colleges
A.A.S., 1956 (State University of New York—Morrisville); B.S., 1961 (S.U.N.Y.—Oswego). Additional study at Cornell University, Ithaca College and S.U.N.Y.—Cortland.

McCORD, SAMUEL W., Special Services
N.C. State Level III, 1982 (Charlotte, North Carolina).

McDANIEL, ROGER D., Occupational Extension, Food Service Study at Lenoir-Rhyne College, North Carolina State University and Gaston College.

McDONALD, PEGGY P., Health and Physical Education
B.S., 1958 (Winthrop College). Additional study at University of South Carolina.

McDOW, ROGER, Air Conditioning, Heating and Refrigeration
Diploma, 1984 (Central Piedmont Community College).

McDUFFIE, JEAN STOVALL, Library Services
B.A., 1964 (Johnson C. Smith University); M.S.L.S., 1965 (Atlanta University).

McGAHA, GEORGE D., Electrical/Electronics Engineering Technology
A.A.S., 1981 (Central Piedmont Community College).

McGRATH, RALPH L., Director, Cash Receipts, Business Office
Diploma, 1960 (American Institute of Banking).

McILWAIN, DORIS W., Media Production
B.A., 1971 (Meredith College); M.Ed., 1975 (University of North Carolina at Chapel Hill).

McINTOSH, WILLIAM A., Vice President, Educational Planning and Evaluation
A.B., 1960 (Elon College); M.S., 1964; Ed.D., 1969 (North Carolina State University).

McKENZIE, SARAH W., Assistant Purchasing Agent

McKIM, LEON B., Police Science
B.A., 1949 (University of Florida); M.A., 1969 (Florida Atlantic University). Certified Criminal Justice Instructor.

McLAWHON, DOROTHY H., Health Careers Lab
Study at Central Piedmont Community College.

McMULLIN, DENNIS G., Program Director, Commercial Art
Professional Diploma, 1963 (Maryland Institute College of Art). I.D.E.C.

McMURRAY, ROBERT W., Director, Accounts and Records, Business Office
Diploma, 1969 (Robert Morris Junior College).

McPHETERS, EDITH, Accounting
B.S., 1946 (Furman University). Additional study at Duke University and University of North Carolina at Chapel Hill. Certified Public Accountant.

MADDOX, MARSHALL M., Behavioral and Social Science
A.A., 1959; B.A., 1964; M.Ed., 1969 (University of Florida). Additional graduate study at University of Florida.

MAIORANO, JONA D., Human Services
B.A., 1979 (University of North Carolina at Charlotte).

MAIORANO, SALVATORE A., Civil Engineering Technology
B.S., M.A.E., 1971 (North Carolina State University). Additional study at University of North Carolina at Charlotte. Registered Professional Engineer.

MAPLES, WILLIAM M., Program Director, Environmental Systems
A.A.S., 1974 (Central Piedmont Community College).

MARTIN, EDWARD VAN, Counseling Services
B.A., 1959 (Johnson C. Smith University). Additional study at University of Minnesota and Virginia Commonwealth University.

MAULDIN, PHILIP B., Department Head, Behavioral and Social Science
A.B., 1960 (University of North Carolina at Chapel Hill); M.A., 1968 (Appalachian State University); Ph.D., 1973 (University of Alabama).

MAXWELL, DELORES M., Associate Degree Nursing
Diploma, 1962 (Provident Hospital School of Nursing); B.S., 1974 (Queens College); M.S.N., 1976 (University of North Carolina at Chapel Hill).

MAYHEW, JANICE F., Program Director, Medical Assisting
R.N., 1960 (Presbyterian Hospital School of Nursing); B.S., 1961 (Queens College). Additional study at Queens College and University of North Carolina at Charlotte.

MEE, MARY ANN, Performing Arts, Dance
B.F.A., 1967 (Stephens College). Additional study at Texas Woman's University, University of Oregon, American Dance Festival at Connecticut College, Perry-Mansfield School of Theatre and Dance, Charles Weidman: Expression of Two Arts Theatre.

MELSON, SUSAN CRANE, Catalog Librarian
B.A., 1962 (Pfeiffer College); M.S.L.S., 1966 (University of North Carolina at Chapel Hill).

MOOSE, MARY C., Library Services
A.A., 1946 (Stephens College).

MORRIS, THOMAS R., Program Director, Respiratory Therapy
B.S., 1966 (University of Alabama); Certificate in Respiratory Therapy, 1968 (Duke University Medical Center).

MORROW, ROBERT A., JR., Mathematics
B.S., 1959; M.S., 1961 (North Carolina State University).

MULLIS, JACK R., Manager of Plant Operations and Purchasing

MULLIS, JAMES S., Advancement Studies
A.A., 1979 (Central Piedmont Community College); B.A., 1984 (University of North Carolina at Charlotte).

MUMFORD, GLORIA M., Physical Science
B.S., 1953 (Bennett College); M.S., 1964 (North Carolina Central University). Additional study at Michigan State University.

MYERS, MICHAEL G., Director, Public Information and Special Projects
B.S., 1953 (Davidson College). Additional study at Harvard University Institute for the Management of Lifelong Education.

NEEQUAYE, BARBARA BURRIS, Computer Science
B.S., 1975 (University of North Carolina at Charlotte); A.A.S., 1986 (Central Piedmont Community College). Additional study at University of North Carolina at Greensboro, Gaston College and Central Piedmont Community College.

NELSON, CLARA E., Accounting
B.S., 1962; M.A., 1965 (Appalachian State University).

NEVILLE, SUSAN M., North Area Coordinator
B.S., 1970 (State University of New York at Oneonta); M.A., 1985 (Appalachian State University).

NEWLANDER, CHANDLER, Civil Engineering
B.S., 1967 (Winthrop College); A.A.S., (Central Piedmont Community College); B.E.T., 1983 (University of North Carolina at Charlotte).

NICHOLS, ANDY O., Program Director, Industrial Safety, Health, Security and Investigations
B.A., 1974 (Winthrop College). Licensed Auto Stress Examiner; Licensed Private Detective; N.C. Certified Criminal Justice Instructor

NIELSEN, BJARNE T., International Culture
B.S., 1970 (Aalsborg Seminarium, Denmark); B.A., 1974 (Ambassador College, England).

NIVENS, CAROLYN W., Junior Accountant, Business Office
A.A.S., 1980 (Central Piedmont Community College).

ODELL, BETTY P., Associate Degree Nursing
B.S.N., 1979 (Lenoir-Rhyne College); M.S.N., 1982 (University of North Carolina at Greensboro).

ODELL, ROBERT STANLEY, Mechanical Engineering Technology
B.S., 1951; M.A., 1959 (East Tennessee State University). Additional study at University of North Carolina at Chapel Hill and North Carolina State University.

ODER, HENRY ALLEN, Program Director, Paralegal
A.B., 1947; LL.B., 1956 (Washington and Lee University).
O'NEILL, WALTER C., Program Director, Food Preparation
Diploma, 1941 (Cooks and Bakers School). Additional study at Florida International University and Miami Dade Community College. Certified Executive Chef.
O'QUINN, SHEILA P., Dental Programs
Dental Assisting Diploma (Central Piedmont Community College).
OPLINGER, M. PHOEBE, Director, Library Services
A.B., 1946 (Maryville College); M.S.L.S., 1959 (Drexel University).
OSBORNE, HUGH M., Assistant Manager of Plant Operations
Study at Central Piedmont Community College; Electrical Apprenticeship Training, 1970; Journeyman's Certificate, Mecklenburg County, 1970; Journeyman's Certificate, Charlotte, 1977. N.C. State Electrical Contractor's License, 1977.
OTTERBOURG, EDNA M., Biology
B.S., 1953 (University of North Carolina at Greensboro); M.A.T., 1968 (University of North Carolina at Chapel Hill).
PAINTER, STEVE ALLEN, Civil and Architectural Engineering Technology
A.A.S., Civil Engineering Technology, 1981; A.A.S., Business Administration, 1984; A.A.S., Marketing and Retailing, 1985; A.A.S., Architectural Technology, 1985 (Central Piedmont Community College).
PASCHAL, MARY LOU, Performing Arts, Music
B.M., 1957 (Oberlin Conservatory of Music); M.M., 1959 (University of Mississippi). Additional study at Harvard University.
PAYNE, JAMES M., Welding
Study at West Virginia State, Morris Harvey College, Central Piedmont Community College and F.M.C. Ordinance Division Welding School. A.W.S., A.S.M.E., A.B.S. and Military Welding codes qualifications, steel and aluminum.
PENNINGTON, ARIS T., Director, Older Adult Program
B.S., 1972 (Tuskegee Institute).
PERKINS, WILLIAM S., Media Production
B.A., 1972; M.Ed., 1974 (University of Houston).
PERSON, LELAND, Telecourse Center
B.A., 1977; M.Ed., 1981 (North Carolina Central University).
PERSON, PAMELA W., Microcomputer Specialist, Media Services
B.S., 1977 (North Carolina Central University). Additional study at Appalachian State University.
PETTICE, GEORGE, Director of Inventory Control
PETTY, NORMAN HOLMES, Director, N.C. Rural Renaissance Consortium
B.A., 1962 (Wheaton College); M.B.A., 1970 (Georgia State University); Ph.D., 1981 (University of North Carolina at Chapel Hill).
PITTS, CAROLYN, Associate Director, Student Financial Aid
B.S., 1966 (Livingstone College); M.Ed., 1976 (University of North Carolina at Charlotte).
PORTER, LINDA K., Program Director, Medical Record Technology
A.S., 1970 (Lees-McRae College); Certificate in Medical Record Administration, 1972 (Bowman Gray); B.S., 1972 (Western Carolina University); Registered Records Administrator, 1972. Additional study at University of North Carolina at Charlotte.
PRIM, MARZELLE RENEE, Business Administration
Diploma—Electronics, 1971; A.A.S, 1972, 1975, 1977 (Central Piedmont Community College). Additional study at New Jersey State University, Louisiana State University, University of North Carolina at Charlotte, and Central Piedmont Community College.
PRIVETTE, DAVID R., Physical Science
B.A., 1975 (University of North Carolina at Charlotte); M.A., 1978 (University of Georgia).
QUINN, EMMA R., Director, Small Business Center
B.B.S., 1980 (Queens College). Additional study at University of North Carolina at Charlotte.
RANDALL, ANNETTE M., Writing and Humanities
A.B., 1967 (University of North Carolina at Chapel Hill); M.A., 1968; Ed.S., 1977 (Appalachian State University); Ph.D., 1982 (University of Texas at Austin).
RANDALL, DAVID M., Mechanical Engineering Technology
A.A.S., 1981 (Central Piedmont Community College).
READ, DANIEL EDWIN, JR., Biology
B.S., 1961 (University of Florida); M.A., 1964 (Duke University). Additional study at University of North Carolina at Greensboro and University of North Carolina at Charlotte.
REID, ANN C., Secretarial Science
B.S., 1959 (Appalachian State University); M.A.T., 1974 (Winthrop College).
REID, RUFUS EUGENE, JR., Advancement Studies
B.S., 1958; M.Ed., 1965 (Appalachian State University).
REYNOLDS, BRADFORD J., Division Head, Human and Public Services
A.B., 1962 (Elon College); M.Ed., 1967 (University of North Carolina at Greensboro); Ed.D., 1977 (Nova University).
RHODEN, DAVID A., Operations Coordinator, Testing Center
A.A., 1972 (Central Piedmont Community College); B.A., 1975 (University of North Carolina at Charlotte).
RICHARD, RAYMOND G., Writing and Humanities
B.A., 1953 (University Saint-Louis, Edmunston, NB, Canada); M.A., 1963 (Université Laval, Quebec, PC, Canada). Additional study at University of London and University of South Carolina.
RICKETSON, CYNTHIA L., Writing and Humanities
B.S., 1964; M.A., 1966 (University of Tennessee).
RITCH, FRED S., CAM Lab Manager and Machine Shop Instructor
A.S., 1944 (Centenary College).
ROBARCHEK, PEG, Director of Marketing and Public Relations.
B.A., 1975 (Florida State University).
ROBERTS, FLORA EMILY, Accounting
A.A.S., 1975 (Central Piedmont Community College).
ROBINSON, LOUISE PARSON, Counseling Services
B.S. 1956, M.S., 1963 (Oklahoma State University).
ROGERS, JAMES COOK, Behavioral and Social Science
B.A., 1966; M.A. 1968 (Wake Forest University). Additional graduate study at University of California at Berkeley and University of Kentucky.
ROJO, LORETTA BURCH, Accounting
B.S., 1965 (Winthrop College); M.Ed., 1969 (University of North Carolina at Greensboro).
ROSS, BOBBIE G., West Area Coordinator
B.S., 1958 (Appalachian State University); M.S., 1978 (Winthrop College). Additional graduate study at University of North Carolina at Greensboro and Charlotte.
ROSS, ELIZABETH SPROUL, Arts, Fine Arts
B.A., 1959 (Queens College); M.F.A., 1965 (University of North Carolina at Greensboro).
ROSS, MARGARET M., Minority Recruiter
A.B. (North Carolina Central University). Additional study at University of North Carolina at Charlotte.
ROUZER, NANCY C., Behavioral and Social Science
B.A., 1942 (Duke University); M.A.T., 1964 (Winthrop College). Additional study at Winthrop College.
ROWELL, ANN PARKIN, Accounting
B.S., 1973 (University of North Carolina at Greensboro); M.B.A., 1985 (Winthrop College). Certified Public Accountant.
RYAN, VIRGINIA, Counseling Services
B.S., 1958; M.S., 1964 (University of Southern Mississippi). Additional study at University of Southern Mississippi.

ST. CLAIR, DONNA, Special Services
A.A., 1961 (George Washington University); B.A., 1975 (University of North Carolina at Charlotte). North Carolina State Level II, 1982 (Charlotte, North Carolina).

SAMPSON, BOB G., Speech
B.A., 1965 (Western Kentucky University); M.A., 1968 (Ball State University); Ed.S., 1973 (Appalachian State University).

SASSER, JAMES HOWARD, Behavioral and Social Science
A.B., 1959 (High Point College); M.A., 1960; Ed.S., 1968 (George Peabody College for Teachers); Ed.D., 1976 (Nova University).

SAVAGE, MOLLY F., Medical Assisting/Health Record Clerk
A.A., 1955 (Mars Hill Junior College); B.S.N., 1958 (Duke University). Registered Nurse.

SCHOETTLER, SUSAN B., Business Administration
B.A., 1970 (Eastern Michigan University); J.D., 1973 (Detroit College of Law).

SHAMSID-DEEN, DEVENURE NIVENS, Writing and Humanities
A.B., 1968 (Johnson C. Smith University). Additional study at University of North Carolina at Charlotte.

SHAPIRO, ADELE, Mathematics
A.B., 1976 (Brooklyn College); M.S., 1958 (Yeshiva University Graduate School of Education). Additional study at Hofstra University.

SHAW, EDWARD H., Program Director, Real Estate
B.S., 1943; M.S., 1948 (Georgia Institute of Technology).

SHAW, RUTH G., President
B.A., 1969, M.A., 1972 (East Carolina University); Doctoral Study, 1974-75 (North Carolina State University); Ph.D., 1977 (University of Texas).

SHIRKEY, KATHRYN T., Program Director, Child Care Training Center
B.A., 1952 (Albion College).

SIMMONS, NOAH GAYLE, Executive Vice President
B.S., 1948 (Southeast Missouri State College); M.A., 1951; Ed.D., 1960 (Washington University). Additional study at Michigan State University.

SMITH, BRUCE HENRY, Vice President, Administrative Services
B.A., 1957 (Lenoir-Rhyne College); M.B.A., 1964 (Auburn University); Ed.D., 1980 (Nova University). Additional study at University of North Carolina at Chapel Hill. Certificate in Municipal Administration.

SOOS, GEORGE, Program Director, Mechanical Engineering Technology
B.S.E., 1944 (Hungarian Royal Technical Military Academy). Additional study at North Carolina State University. Registered Professional Engineer.

SQUIRES, CARL EDWIN, Vice President, Careers Group
B.A., 1959; M.A., 1962 (Arizona State University); Ed.D., 1976 (University of Missouri).

STANBACK, ERNEST H., Director, Adult Education and Contractual Programs
B.S., 1945 (Agricultural and State Technical University); M.Ed., 1956 (Cornell University). Additional study at University of North Carolina at Chapel Hill, Duke University, Morgan College and Hampton Institute.

STANLEY, KAREN, International Culture Department
B.A., 1977 (Wayne State University); Certificate in Teaching English as a Second Language, 1980 (American University); Equiv. M.A., 1981 (American University). Additional study at University of Virginia.

STARNES, CHARLES C., Performing Arts, Music
B.S., 1956 (East Carolina University); M.Ed., 1967 (University of North Carolina at Chapel Hill). Additional study at Florida State University and Oberlin College Conservatory.

STEARNS, LARRY M., Biology
B.S., 1962 (Maryville College); M.S., 1965 (University of Tennessee); Ph.D., 1970 (Clemson University).

STEARNS, MARTHA, Reading
B.S.E., 1961 (Maryville College); M.Ed., 1969 (Clemson University).

STILLWELL, GORDON STEVE, Program Director, Automotive Technology
Diploma, 1968; A.G.E., 1971; Diploma, 1979 (Central Piedmont Community College).

STINSON, ANNETTE, Administrative Services

STRICKLAND, SAM J., Director, Maintenance
A.A., 1972 (Central Piedmont Community College); B.T., 1977 (Appalachian State University).

SUGGS, BEVERLY S., Writing and Humanities
B.A., 1970; M.A., 1975 (University of North Carolina at Charlotte). Additional study at University of North Carolina at Chapel Hill. Certified Secondary Teacher.

SULLIVAN, JOANNE, Library Services
B.S., 1950 (East Tennessee State University); M.A.L.S., 1952 (George Peabody College, Vanderbilt University). Additional study at University of Tennessee and Memphis Academy of Arts.

SUMEREL, JERRY J., Special Services
Comprehensive Skills Certificate, 1977 (Columbia, South Carolina).

SUMMER, JOSEPH T., Program Director, Horticulture
B.S., 1969 (Clemson University).

SUMMERS, JACK H., Communications
B.A., 1976; M.A., 1979 (Western Carolina University).

SURPHILIS, ROSS C., Director, Student Activities
B.S., 1959 (St. Louis University); A.M., 1962 (University of Missouri). Additional study at University of Illinois.

SUTCLIFFE, GEORGE H., Business Administration
B.S., 1960 (Davidson College); M.A., 1961 (East Carolina University); Ed.D., 1980 (Nova University). Additional study at North Carolina State University.

SUTTON, ROBERT T., Facilitator, ABLE Center
B.A., 1977 (University of North Carolina at Chapel Hill).

SWANDER, MARTHA JO, Computer Science
B.S., 1971; M.S., 1976 (Radford University).

SYFERT, DAVID VERNON, Behavioral and Social Science
B.A., 1964 (Cornell College); M.A., 1966 (Michigan State University). Additional study at Michigan State University.

TALBERT, EARL DONALD, Computer Science
A.B., 1951 (Catawba College). Additional study at North Carolina State University and Appalachian State University. Professional Certificate in Data Processing.

TEMPLE, WILLIAM S., Advancement Studies
A.B., 1956 (Lenoir-Rhyne College); M.Ed., 1962 (University of North Carolina at Chapel Hill). Additional study at Duke University).

TEMPLEMAN, DEBRA, Counseling Services
B.A., 1976 (University of North Carolina at Charlotte); M.A., 1980 (Spalding College). Additional study at University of Dayton Law School, University of Louisville School of Police Administration, and Winthrop College.

TERRY, BEVERLY E., Accounting
B.A., 1969; M.A., 1971 (University of Missouri at St. Louis). Additional study at Southern Illinois University. Certified Public Accountant.

THARPE, LAVERYL N., Matthews Area Learning Center
B.A., 1963 (Wayne State College).

THOMPSON, JENNIFER L., Dental Programs
B.S., 1979 (University of North Carolina at Chapel Hill); M.Ed., 1985 (North Carolina State University).

TIMBLIN, GEORGE A., Division Head, Technology
B.S.E.E., 1962 (Duke University); M.Ed., 1975 (University of North Carolina at Charlotte).

TONG, DIEP N., Junior Accountant, Business Office
A.A., 1976 (Rochester Community College); B.S., 1978 (Winona State University).

TRIPP, JOHN DOUGLAS, Director, Veterans Affairs and Testing Center Services
B.S., 1947 (North Carolina State University); M.R.E., 1951 (Southwestern Baptist Theological Seminary). Additional study at Appalachian State University, North Carolina State University, University of Virginia and Auburn University.

VANCE, THOMAS M., Performing Arts, Drama
B.S., 1960; M.A., 1962 (Appalachian State University). Additional study at University of North Carolina at Chapel Hill and University of Georgia.

VARNELL, HILDA, Advancement Studies
A.B., 1963 (Atlantic Christian College); M.Ed., 1976 (University of North Carolina at Charlotte).

WADE, JO ELLEN, Media Production
Diploma, 1953 (Bradford Junior College); B.A., 1955 (University of North Carolina at Chapel Hill); M.A., 1985 (Appalachian State University).

WAGNER, CARL C., Architectural and Civil Engineering Technology
A.A.S., 1976 (Central Piedmont Community College); B.E.T., 1979 (University of North Carolina at Charlotte).

WALKER, HAROLD DEAN, Director, College Data Processing
A.A.S, 1967 (Central Piedmont Community College).

WALLACE, ROBERT G., Welding
Diploma, 1963 (Central Piedmont Community College). Additional study at North Carolina State University.

WALTERS, RONALD KEITH, Art, Commercial Art
B.F.A., 1956 (Maryland Institute of Art); M.Ed., 1973 (University of North Carolina at Charlotte).

WARD, RICHARD C., Economics
B.S., 1939 (Ohio University); M.A., 1966 (St. Mary's University, Texas).

WARREN, GEORGE C. III, Behavioral and Social Science
A.B.,, 1965 (Birmingham Southern College); M.A., 1970 (University of Alabama).

WATSON, BETTY L,, Director, Counseling Services
B.A., 1952 (University of Denver); M.A., 1956 (Columbia University). Additional study at University of South Carolina, University of LaVerne, University of North Carolina at Charlotte and Central Piedmont Community College.

WATSON, PATRICIA ANNE, Child Care Training Center
Study at Winthrop College.

WAY, MARY A., Writing and Humanities
B.A., 1960 (Queens College); M.A.T., 1965 (University of North Carolina at Chapel Hill). Additional study at University of North Carolina, Winthrop College, Oxford University (England), University of Illinois and Cornell University.

WEBB, B. G., Director, Purchasing
Kings Business College.

WESCOTT, RENEE, Vice President, Learning Resources
B.S., 1952 (Fayetteville State University); M.A., 1968 (North Carolina Central University); Ed.D., 1972 (Duke University).

WEST, CHARLOTTE HAMOR, Secretarial Science
B.A., 1946 (University of North Carolina at Chapel Hill). Additional study at Carolina Business College, Central Piedmont Community College and Appalachian State University.

WHITLEY, JAMES A., Respiratory Therapy
A.A.S., 1975 (Central Piedmont Community College); B.S.W., 1985 (Pfeiffer College). Certified Respiratory Therapy Technician. Registered Respiratory Therapist.

WHITLEY, RALPH W., Behavioral and Social Science
A.B., 1965 (University of North Carolina at Chapel Hill); M.A., 1968 (Appalachian State University).

WHITMAN, WILLIAM CHARLES, Division Head, Industry
B.Ed., 1957 (Keene State College); M.Ed., 1963 (St. Michael's College).

WHITTEN, SALLY T., Program Director, Physical Therapist Assistant Program
B.S., 1975 (Medical University of South Carolina). Additional study at University of North Carolina at Charlotte. Licensed Physical Therapist.

WIDENHOUSE, JAMES WAYNE, Director, Machinist Program
Certificate, 1971 (North Carolina Machinist Apprenticeship); Machinist Diploma, 1972 (Central Piedmont Community College). Additional study at Western Carolina University.

WILLIAMS, AMY T., Associate Degree Nursing
Diploma, 1974 (Presbyterian Hospital School of Nursing); B.S.N., 1977 (University of North Carolina at Charlotte).

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